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THE BRICKBUILDER.

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FROM WORK OF WILLIAM ATKINSON, ERNEST FLAGG, J. H. FREEDLANDER, K. M. MURCHISON, YORK & SAWYER.

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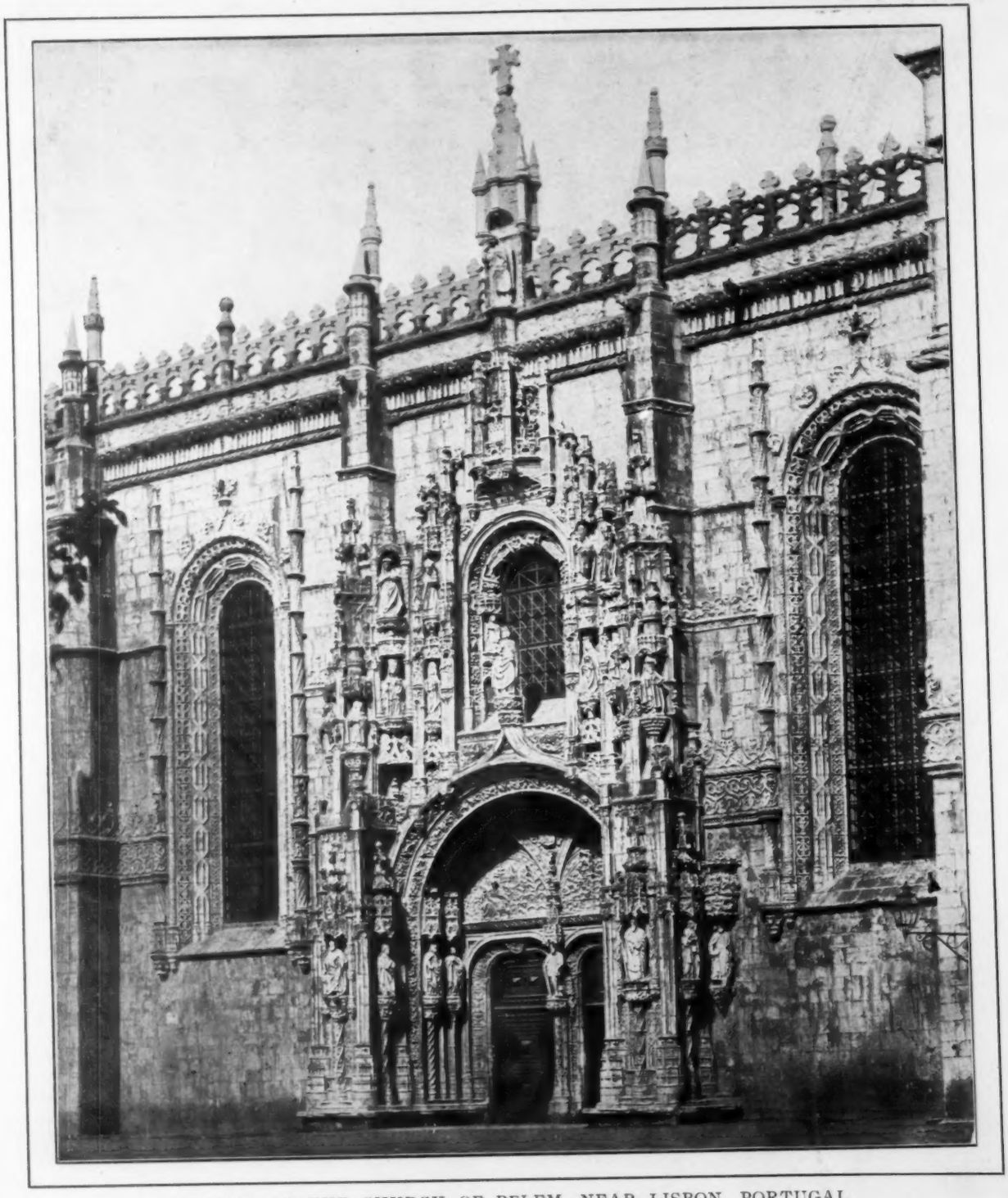

PORTAL OF THE CHURCH OF BELEM, NEAR LISBON, PORTUGAL.

THE BRICKBVILDER

VOL. 13 No. 5 — DEVOTED · TO · THE · INTERESTS · OF ARCHITECTVRE · IN · MATERIALS · OF · CLAY — MAY 1904

THE BRICKBUILDER.

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HARVARD AND THE INSTITUTE OF TECHNOLOGY.

HARVARD UNIVERSITY and the Massachusetts Institute of Technology are mutually considering the advisability of some form of combination of interests, and joint committees have been appointed from the two institutions to take the matter under advisement. The public announcement of the fact that some such action is under consideration has aroused a great deal of interest, and in some cases has called forth very decided expressions of opinion on the part of the alumni of the Institute, who have been heard from very emphatically as being in great part opposed to any form of union. The alumni at Harvard do not seem to have much to say upon the subject. Just why there should be any opposition to a combination of interests is not easy to explain, except on the assumption of a class spirit which would be more powerful than any real desire to advance the cause of education. There is an admitted element of unnecessary waste in conducting two institutions of such similar character so close together. The Lawrence Scientific School of Harvard University is richly endowed with money and everything that money can give. The Institute, on the other hand, has a splendid record of achievement, with rather limited means and inadequate equipment. The tendency is growing every year to consider engineering and architecture as properly post-graduate studies, and the desirability of a young man who shall enter either of these professions having first taken his degree at a university is more and more admitted, and if these studies are to become, as seems quite likely, functions of post-graduate work, we cannot see wherein the Technology would be any loser by a combination with Harvard, while it is beyond question that students would profit greatly by coming under the ægis of the older and richer school. The Technology would undoubtedly lose a certain amount of its independence by the merger, and yet the Harvard Medical School, the Harvard Law School and the Lawrence Scientific School are each known as distinct institutions, though they are parts of Harvard University. The deciding question really ought to be whether or not the cause of education would be advanced by the union rather than whether an institution or a name will be to a greater or lesser degree modified, and to that proposition there can be really only one answer. It is our sincere hope that opposition to this union may take only such form as will result in bringing about the very best and most effective form of alliance.

ROTCH TRAVELING SCHOLARSHIP.

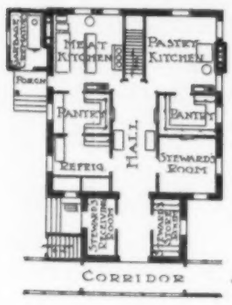
THERE are two points in regard to the Rotch Traveling Scholarship which with each succeeding year are made more manifest. It was undoubtedly the expectation of the Rotch heirs when this prize was founded that its beneficiaries would be drawn to a certain extent from a number of those young men who had not been able to profit by instruction in the regular architectural schools. As a matter of fact, however, out of the twenty-one who have won this prize sixteen were educated at regular architectural schools, and of the remaining five, three had received a technical engineering education, only two of the whole number having been limited in their architectural education to the opportunities of office practice. Another point is that though from year to year different architects have been called upon to judge the designs submitted in competition, and though the character of the problems has varied greatly, almost without exception the basis of the awards has been along pretty strict academic lines, and excellence of planning, correlation between the design and the plan, and academic design have apparently in every case been considered of far more importance than mere tricks in rendering or facility in drawing. This is certainly as it ought to be, and the Boston Society of Architects is to be congratulated upon the manner in which, through all these years, the scholarship has been directed along uniform lines.

Hospital Planning. V.

BY BERTRAND E. TAYLOR.

THE early hospitals contained only congregated wards and very seldom, if ever, rooms or wards for single beds.

In America there has been a gradual evolution from the pavilion with an open ward and toilets to a highly perfected scheme with open wards, solaria, nurses' room, toilet and bath, two-bed wards, isolated private wards with special toilet, bath and solaria, with the necessary diet kitchen, linen and clothing room, etc., as shown, for instance, in the male and female medical and surgical pavilions of the Bradford, Pa., Hospital.



FIRST FLOOR PLAN

KITCHEN BUILDING, HOSPITAL AT BRADFORD, PA.
Green & Wicks, Architects.

In the early hospital it is a great question how they did the work with absolutely no conveniences; and as we study the plans of recent hospital construction abroad, it is evident that the evolution has progressed more slowly there than in the United States, and that there has been comparatively little change in the general plan of a pavilion in the past twenty years.

There was a time when travelers were willing to sleep in a hotel room with several fellow travelers in separate beds in the same room. Two-bed rooms are still quite common in some parts of the country to-day. Not so very long ago one bath to a floor did very well in the average hotel. To-day, however, travelers demand a separate room and generally a private bath, and they are willing to pay the extra price.

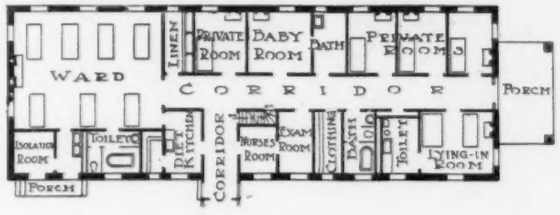
So in hospitals a few years ago all patients suffered, were interviewed by friends, examined by the medical staff, consoled by the minister and generally died in public, as it were, the subject of interest to fellow sufferers on all sides; sometimes protected by a screen and sometimes not.

The uneducated and the poorer classes seem to prefer the open ward, but the more intelligent, more sensitive and highly organized demand the private room or, if unable to pay for this, the small two or three bed ward.

Thus, as shown in the Bradford Hospital pavilion, there are twenty-four open-ward beds, eight two-bed wards, and three single-bed private wards, that is, nineteen practically private beds to twenty-four public or open-ward beds.

In the Merritt Hospital, designed in 1902, but on account of strikes, etc., but just started, there is, in the two-story pavilion shown, twelve open-ward beds and sixteen single-bed private rooms, an unusual example of this development in a general hospital.

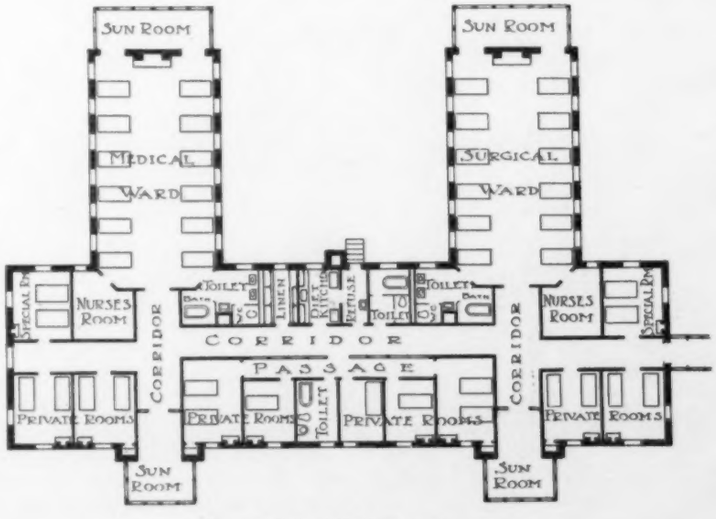
The Norfolk Protestant Hospital (illustrated on page 73, THE BRICKBUILDER for April, 1904) shows this development also, but to a less degree than the Merritt. Here we have in each two-story pavilion thirty open beds and twenty single-bed private rooms.



FIRST FLOOR PLAN

MATERNITY PAVILION, HOSPITAL AT BRADFORD, PA.
Green & Wicks, Architects.

In the one-story pavilion of the Brattleboro, Vt., Hospital this idea is also developed to an unusual degree, there being ten open-ward beds and nine or ten private-room beds. This pavilion is like that of Bradford, a double or composite pavilion, but the isolation is sufficiently perfect, and there is a great economy of service when few beds are occupied.



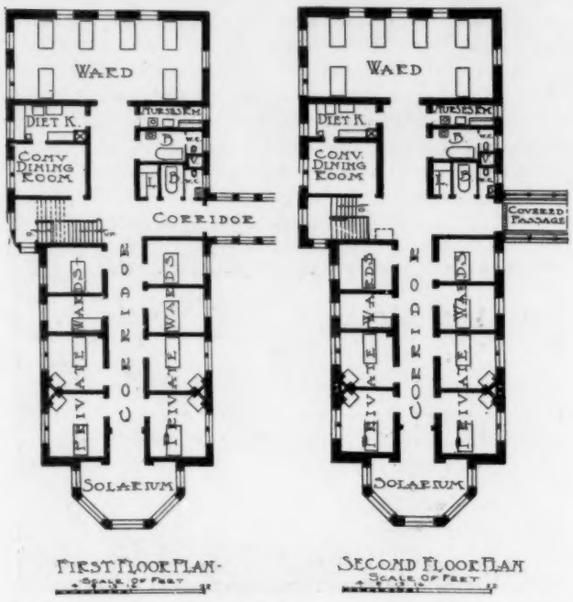
FIRST FLOOR PLAN

MEDICAL AND SURGICAL PAVILION, HOSPITAL AT BRADFORD, PA.
Green & Wicks, Architects.

A novel feature in this plan is the nurses' toilet and dressing room, which every pavilion should have; also the open-air balcony in addition to the two sun rooms and the inclined planes down which patients can reach the ground and rest under the shade of a marquee or a grove of trees.

The two-story pavilion of the Lynn, Mass., Hospital is a little unusual in that it has the open ward on the first story and the private rooms on the second, an automatic electric ele-

vator connecting the two floors, and each, as will be seen, being fully provided with every possible convenience and accessory. The solaria have fire escapes of iron and are unusually spacious. The diet kitchens

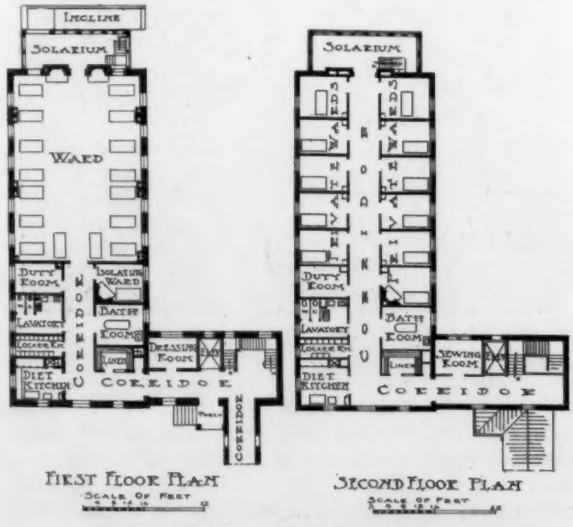


WARD BUILDING, SAMUEL MERRITT HOSPITAL, OAKLAND, CAL.
Kendall, Taylor & Stevens, Architects.

have enough room, which is quite an unusual condition, and there is a surgical dressing room for the nurses.

The Newport, R. I., Hospital, designed by William Atkinson, architect, is a very interesting exemplification of this developed pavilion idea.

The special feature to be noticed in this interesting plan is the semi-isolation of the toilet rooms, the entrance being by a passage out into and through a circular bay back into the main body of the pavilion. The scheme is evidently intended to provide a lighted and aired cut-off

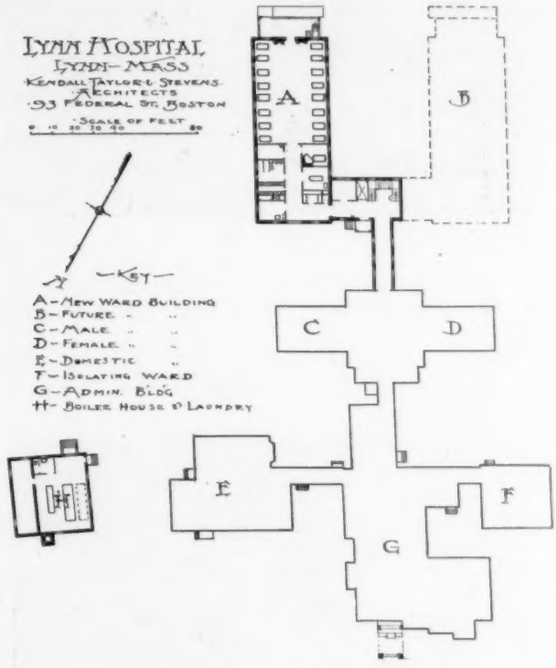


WARD BUILDING, HOSPITAL, LYNN, MASS.

between the corridor and the toilet. This is a mean between the extreme isolated English or Scotch tower connected by an aired passage, and the toilet opening directly from the ward, as found in some important work.

It seems to the writer that the isolated toilet pavilion or tower, almost invariably found in the British hospitals, is an acknowledgment of bad plumbing and no ventilation. With first-class plumbing and perfect ventilation in the toilet rooms and perfect ventilation of the corridor connecting the wards, there can be no possible danger in the usual American custom of planning in this regard.

As the British hospitals have no generally isolated or private rooms, their customary location of toilets at the



PLAN, HOSPITAL AT LYNN, MASS.
Kendall, Taylor & Stevens, Architects.

outer end of the pavilion answers as far as convenience goes, but with the private rooms found necessary here, a double outfit would be needed, and this would call for one or two more towers being added to the two already provided.

As the British pavilion usually has its longitudinal axis east and west, these towers are not as objectionable as they would be if added to a pavilion extending north and south in the American manner, in which case they would cut off the sun from the open ward a great part of the day and cast shadows that would be very objectionable.

The invariable and seemingly necessary conveniences, such as medicine closets, clothing rooms, linen rooms and solaria, are scarcely ever found in British pavilions; sometimes an airing balcony, but not always, and never, so far as I have seen, any opportunity to get the patient into the air in a bed.

The plan of the Eastern District Hospital, Glasgow, Scotland, shows a portion only of the male and female surgical pavilions and operating block, and is interesting in

having the staircase and lift in an isolated tower connected by short corridors with the pavilions, — an economical expedient for serving four buildings with one staircase and one lift, but chiefly of value in making each floor absolutely isolated from the one above and below.

In this plan we note the lack of general conveniences,

SOLARIUM, LYNN HOSPITAL.

such as nurses' room, linen closet, clothing room and solaria or airing balcony. There is, however, a day room and an isolating ward.

Comparatively few plans of British hospitals designed within five years have been published, but all but one

OPEN WARD, MT. SINAI HOSPITAL, NEW YORK.
A. W. Brunner, Architect.

that have appeared have followed quite closely the prevailing type. This one exception is the Royal Victoria Hospital at Belfast, Ireland, referred to in part III, which is a radical departure only in the unique placing of the wards side by side, with the resulting necessity of end and top light only.

The placing of the toilets in corner towers and the general scheme of accessories and conveniences follow closely the conventional.

The surgical pavilion of the Charing Cross Hospital, designed in 1901 by H. Saxon Snell, the well-known hospital architect and one of the authors of "Hospital Construction and Management," clearly shows that the best authorities in England do not consider it necessary to have the private rooms or the other conveniences or accessories thought so essential in this country.

This pavilion is, like those of the Eastern District Hospital, Glasgow, connected with an isolated staircase and elevator tower that serves, also, two other buildings. It has, also, two fire escape bridges leading to other buildings. Both of these are very admirable features.

In a careful examination of reports and illustrations of the rural or cottage hospitals of Great Britain, the same condition is quite evident, namely, little or no development during the past ten years.

It is quite probable that there have been built small

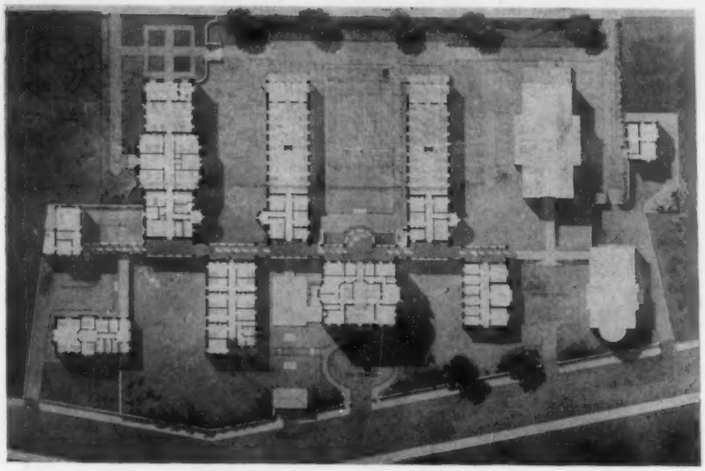
PRIVATE WARD, LYNN HOSPITAL.

hospitals that are a great improvement on Mr. Burdett's model plan of 1877, but most of those that have been published are decidedly inferior in general scheme, although possibly improved in some of the details.

It is evident from the foregoing that here in America the large open ward with no isolating rooms is a thing of the past in any except large public hospitals; that

DIET KITCHEN, LYNN HOSPITAL.

there will be more single and two or three bed wards; and that although this will increase the cost of the nursing service, it will diminish the chance of disease being communicated from one patient to another, and will assist very materially in the isolation and classification so desirable, yet so almost impossible in a hospital with only open wards.



PLAN, NEWPORT HOSPITAL, NEWPORT, R. I.
William Atkinson, Architect.

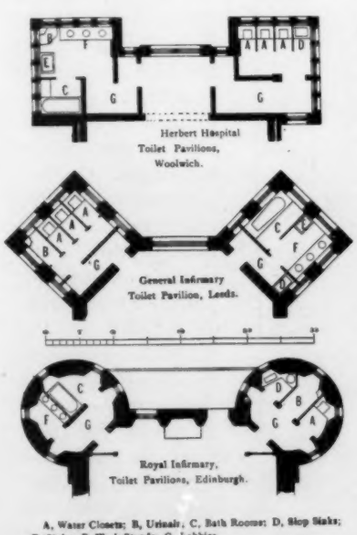
These wards, large and small, should be as sunny, bright and cheerful as possible. They should have open fireplaces with a simple mantel of faience or of Keene's cement, enameled.

There should be twelve hundred to fifteen hundred cubic feet of air per patient, with adequate indirect heat and ventilation.

If it is desirable to have a bay window in a sitting room or bedroom in a house or hotel, it seems as though it would be doubly desirable for a hospital ward, for there is so much more need of sunlight and air.

The surgical pavilion (two story) of the Lowell General Hospital is of an unusual type, as it has to fulfill all the functions of several small isolated pavilions, it being necessary, for certain reasons, to build one structure and only one at this time.

The first floor is for female patients, with open ward, two bed and private rooms and a small maternity department in the rear. Each of these four sections is by itself, entirely cut off from the other. The second story is for male patients and the rear portion is the operating department.



A, Water Closets; B, Urinals; C, Bath Rooms; D, Slop Sinks; E, Sinks; F, Wash Stands; G, Lobbies.

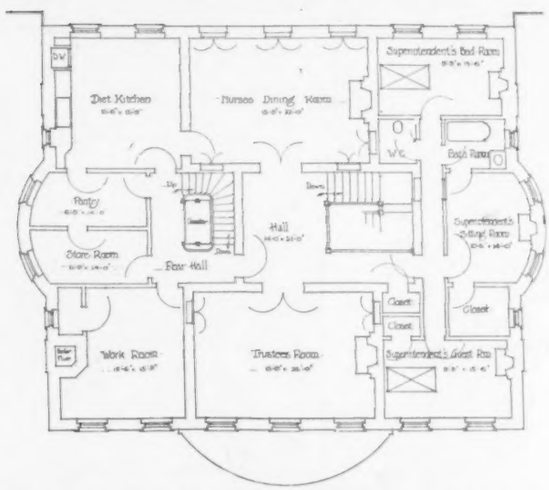
TYPICAL TOILET TOWERS.

The private rooms have fireplaces and bay windows and the open wards have large bay window solaria that can be cut off from the ward by screens when desired.

The open-ward patients and the private ward patients each have separate toilets.

The diet kitchen is a most necessary feature of the pavilion and is generally too small. It should have a complete equipment for preparing and serving all the meals for the patients. A few years ago a small steam jacket kettle answered for all cooking; now, however, a steam table with porcelain covered jars, gas stove, toaster and broiler, with covered meat platter and hot closet under all, thoroughly heated by gas or steam, is required. There is also needed a completely equipped dresser with china closet, tray racks, porcelain lined refrigerator, and a large sink for washing dishes. In addition there must be a large worktable with a top of marble or metal, and a table for loading of trays. If the general kitchen is not on the same floor there needs to be a food lift, which should be of metal.

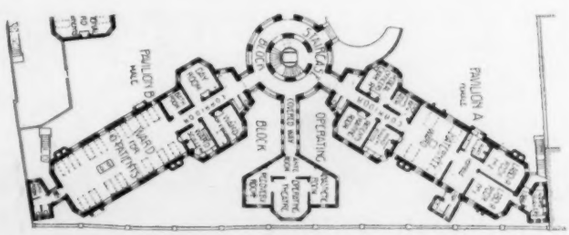
The nurse in charge should have a toilet and dressing room, but it is best to have the nurses' table, records, medicine closet,



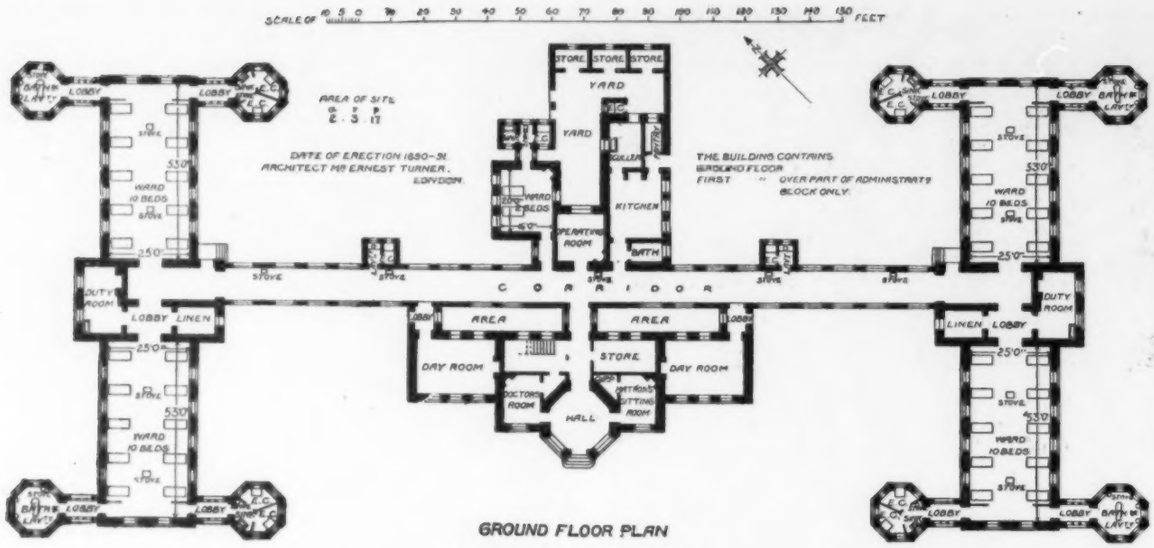
SECOND FLOOR PLAN, NEWPORT HOSPITAL, NEWPORT, R. I.
(Kitchen and Servants' Rooms on Third Floor.)

bells and telephone at a convenient well-lighted point in the corridor, rather than in a room, as has been the custom. The reason is that she would be in closer touch with her business here than in a room, and less apt to neglect her duties. As all corridors should be eight feet wide, there would be ample room.

There should be an electric pressile attached to a plug on the base at the head of each bed to ring an annunciator at the nurses' table.



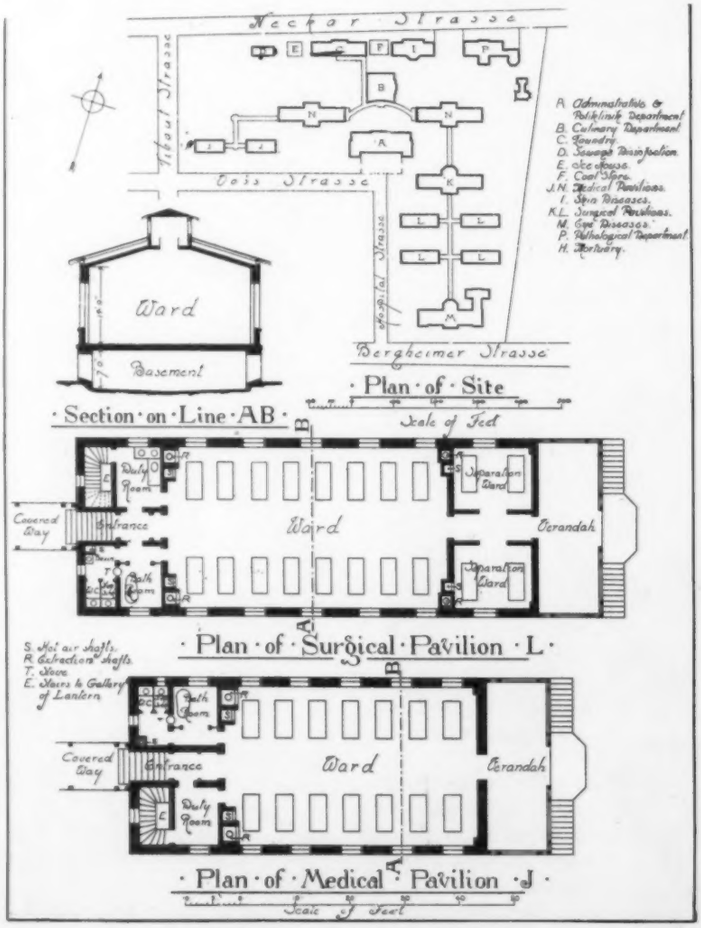
PORTION OF PLAN OF EASTERN DISTRICT HOSPITAL, GLASGOW, SCOTLAND.



TEHERAN HOSPITAL, PERSIA.

In considering the best form for a pavilion or ward building for a hospital, one finds that there have been many experiments with circular, octagon, square and oblong rooms, and that these experiments seem to demonstrate that the only form to seriously consider is the rectangular, with the longest axis approximating north and south, varying to southeast or southwest to advantage. The extreme width should not exceed thirty feet for economy of construction and successful lighting, the length to depend on the number of beds.

If the pavilion is two stories in height there should be a fire escape and the staircase should be isolated. The isolated tower serving several pavilions, as before noted, is a good scheme where the pavilions are close together on a restricted lot, but this crowding of pavilions is a practice that should be deprecated. It should be unnecessary to state that the second floor of a two-story pavilion should be thoroughly sound-proof, and that the walls and partitions should be as nearly sound-proof as possible.

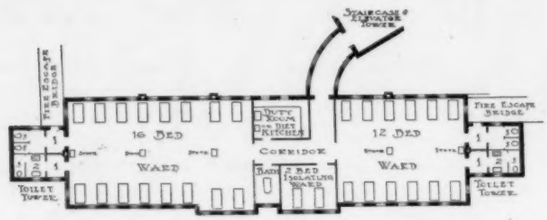


HEIDELBERG UNIVERSITY HOSPITAL.

HOSPITAL ARCHITECTURE.

THE series of articles on Hospital Planning which has been running in these columns has been of a nature which must interest the reader, but the architect cannot fail to notice the extent to which architecture as a fine art is subordinated in the planning of this class of structures. Our hospitals, as customarily built, might be almost anything as far as their external appearance would indicate, and in the desire for simplicity the hospital authorities have managed to almost entirely eliminate the element of beauty, and to so curb their architects that the results are utilitarian often

to a painful degree. We want our hospitals scientifically the best, but there is no good reason why the most rigorous demands of science should not be coupled with architecture of a tpye which shall be pleasing to the unhappy mortals who are doomed to live within their walls. This does not imply elaboration, but neither does it limit a choice to plain bare walls and plaster.

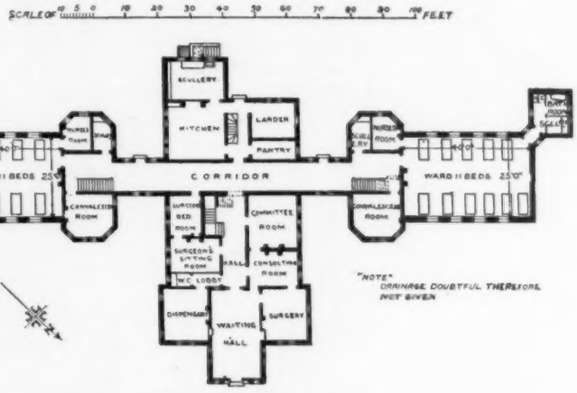


KEY. 1, CUT-OFFS; 2, SINKS; 3 WATER-CLOSETS.

PLAN OF SURGICAL PAVILION, CHARING CROSS HOSPITAL, LONDON.
A. Saxon Snell, Architect.

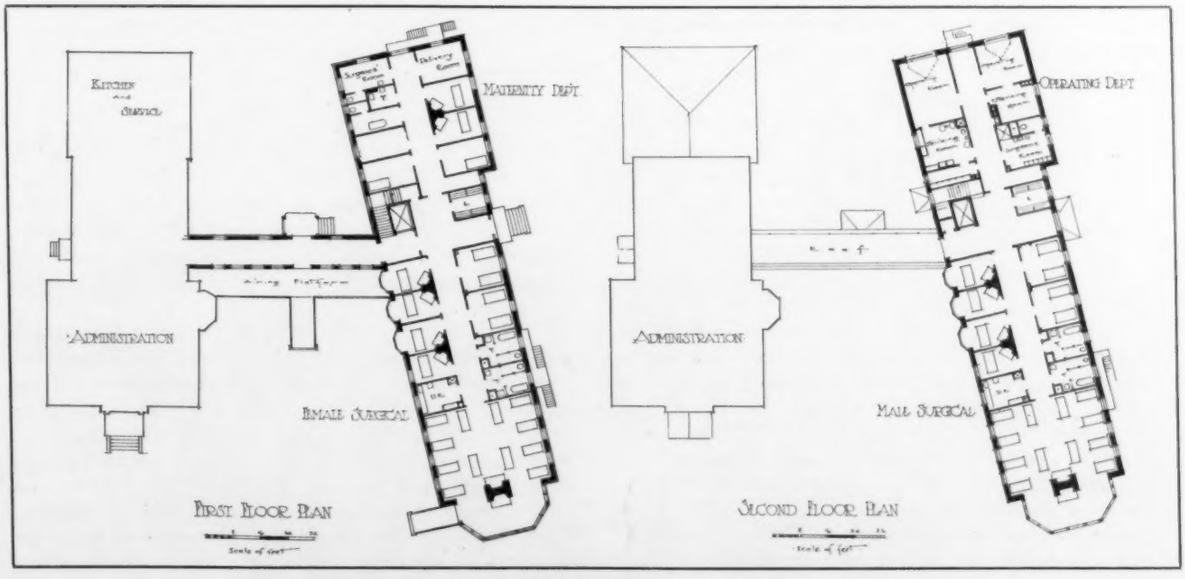
A hospital offers an excellent opportunity for the employment of color in the shape of faience. Some of the most successful treatment of terra-cotta and faience during the period of the Italian Renaissance was in connection with hospitals, and architectural faience naturally suggests the work of the Della Robbias at Pistoja, in the Innocenti, and elsewhere.

It would seem as though in the design of a hospital some of our highest ideals of architecture and building construction might be realized, and in faience we have a material which is exceptionally adaptable both for its sanitary qualities and the beautiful effects which it can give in shape and color,—effects which are lasting and which are obtained at a relatively slight expense. Especially is this true as applies to interior work. We are not doing enough for the great majority of sick people by merely attending to their physical wants. Pleasant, congenial surroundings play a very important part in the healing processes. In many of our cities this has been recognized to the extent of adorning the walls with beautiful photographs, but there is surely just as much reason for beginning more fundamentally and building with beautiful material in appropriate design. No one now questions the necessity of beauty as an educational factor in our schools, but surely the average sick person is in a pretty receptive condition during convalescence. Here the influence of artistic surroundings might count very strongly for good, and there is every reason why a beautiful hospital should be assigned a definite educational value.



GROUND FLOOR PLAN

WEST BROMWICH DISTRICT HOSPITAL, ENGLAND.



SURGICAL PAVILION, LOWELL GENERAL HOSPITAL, LOWELL, MASS.
Kendall, Taylor & Stevens, Architects.

Proposed Cragmor Sanatorium.

THE proposed Cragmor Sanatorium for the treatment of tuberculosis is to be located on a piece of land one hundred acres in extent and situated several miles northeast of Colorado Springs, Col., at the foot of a bluff which will shelter it from the north. The building is to face south-southwest and is a flat segment in plan, thus obtaining shelter from side winds and at the same time retaining the advantage of the south aspect. The building is approximately one thousand feet over extremities, and it has been a matter of difficulty to fit this great length to the irregular contour of the site without undue expense, but this has been accomplished on a line making the building face exactly south and southwest, and in this direction a magnificent view of the mountain range is obtained. To reduce length of building to about seven hundred feet an alternate plan for the wings is considered, making these three in place of two stories high, and thus retaining the same number of patients' rooms.

The center portion of the building is mainly occupied on the first floor by the public administrative rooms. The dining room has been placed so as to obtain the full advantage of the morning sun. The main entrance is placed at the north of the building. This is done to avoid the dust and traffic which would obtain were the entrance placed in the front of the building.

A garden or fore court, at a level of about six feet below main floor of building, is placed opposite the center portion of the building and is enclosed at the ends by cloister features projecting from the ends of central feature. A gateway marks the center of the front wall of garden.

The building will accommodate one hundred patients, eighty-eight of these having special suites, consisting of a sleeping porch, private bath and a room which is meant to be a dressing or sitting room rather than a bedroom, the idea being that patients will sleep outside in the porch. Alongside this room is placed the sleeping porch, with the private bath behind. Each room is provided with a fireplace. Cross ventilation can be obtained by the windows on the two sides, and each bathroom has a special ventilating flue.

This unit of patients' suite has been carried throughout the entire front of the building, in the two upper stories of central building, and in the two stories of the wings. To prevent one patient disturbing another it was necessary to separate the sleeping porches and to avoid one adjoining another either horizontally or vertically. It will be seen from examination of floor plan that horizontally the sleeping porches are all separated from the room intervening, and that no porch is built over another. In this way any disturbance of one patient by another will be reduced to a minimum.

All staircases are shut off from hallways, so that the air will not penetrate from lower into upper stories. In addition, the building is divided into sections by means of doors in the corridors, and each section can be ventilated by itself. Accommodation for nurses and dietary kitchens are provided for each section.

An ample number of porches are provided, consisting of one along the front of central feature, and the two cloisters at the lower level at each end of the garden or fore court will serve also as porches. Several north porches are provided at each section of the building, which will be very desirable during the summer months, and these accommodations will give patients every choice of position.

The external walls will be faced with buff or cream colored brick, and roofs generally will be covered with Spanish tile.

The entire building is heated by direct radiation, and to insure a positive circulation with low pressure in a building of this length is connected with the Paul System of steam heating.

The boilers, which are located beneath the dining room, supply the power for the refrigerating system, the laundry (located some distance from the main building) and the heating system. In order that dust and dirt may be easily removed from around the radiators these are of the cast iron, sectional type with plain surfaces, long nipples and high supports. While the general temperature of the building will be 68 degrees Fahrenheit, all patients' dressing rooms and bathrooms can easily be heated to a higher temperature if desired.

In the basement of each wing is located a tank for supplying the hot water to the plumbing fixtures. These tanks are heated by live steam coils connected direct with the boiler, and the piping from the tanks to the various fixtures is arranged so as to give a continuous circulation. A similar tank in the boiler room provides for the fixtures in the kitchen and main building.

The building is designed to accommodate the best class of patients, and the climate of Colorado being peculiarly favorable to the open-air treatment, the sleeping porches have therefore governed the idea of the scheme. Funds have been donated towards beginning this work, and the idea is that revenue from this undertaking will be devoted to providing accommodations for the poorer class of patients.

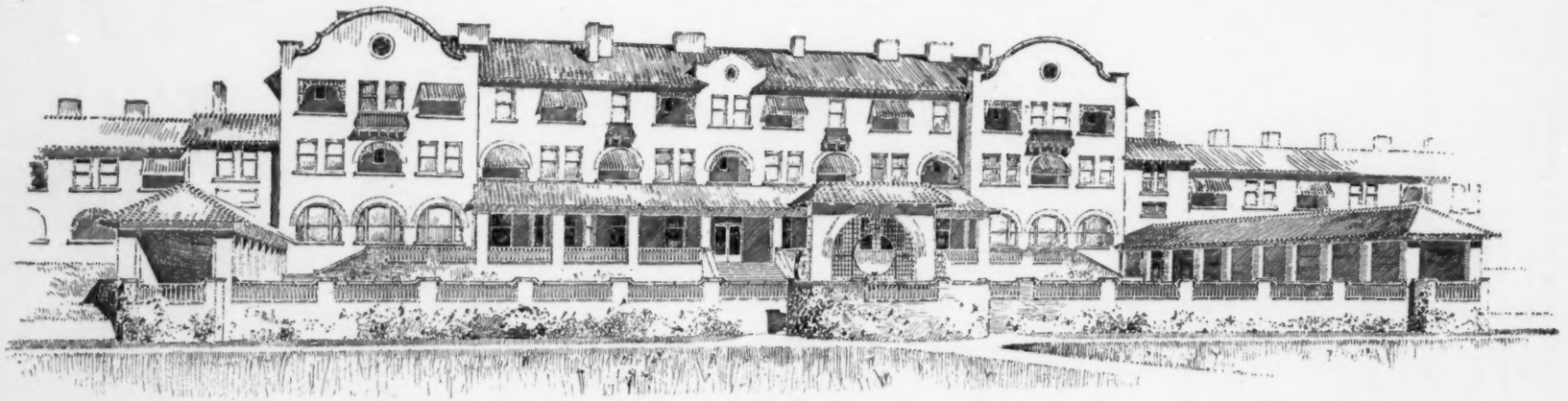
Estimates have been obtained for parts of the building and the whole structure as well, the scheme being laid out so that it can be built in sections if necessary. The total cost will amount to $300,000. The architect of the building is T. MacLaren, of Colorado Springs, and the plans have been prepared in consultation with Dr. S. Edwin Solly, vice-president of Cragmor Sanatorium Company.

LOST ART OF BRICKMAKING CLAIMED TO HAVE BEEN DISCOVERED.

ALMO DE MONCO, M. D., a ceramicist, of Denver, has made exhaustive research, which has resulted, he claims, in the reclamation of the lost art of plaster and brick manufacture as practised by the Babylonian builders and potters.

The plaster as made under De Monco's formulas is exactly the same as that which was used in the manufacture of the ancient tablets upon which was engraved the records of the ancients, and which were unearthed by representatives of the University of Pennsylvania.

As a result of his experiments he can produce a plaster of any degree of hardness from a puttylike paste to a hard-glazed stonelike form as indestructible as adamant. It can be made of any tint, and the surface when smoothed off glistens beautifully without the aid of surface treatment or dressing. It can be made to absorb water or to be entirely waterproof. It can be rolled as thin as a Japanese eggshell cup, and can be used for the crudest gas retorts.



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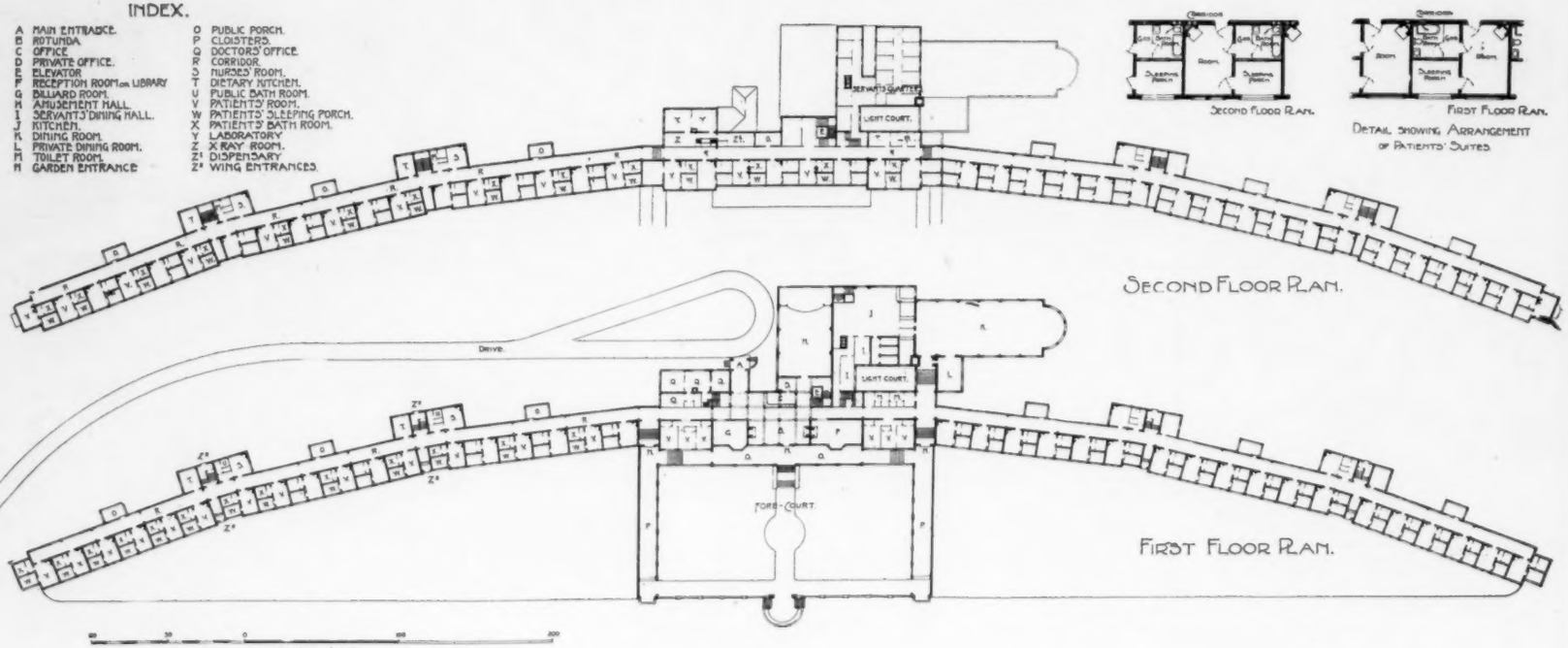


CRAGMOR SANATORIUM (FOR THE TREATMENT OF TUBERCULOSIS), COLORADO SPRINGS, COLORADO.
T. MacLaren, Architect.

A Suburban Clubhouse.
Article III.

BY WILLIS POLK.

THE country club, having become an institution in American life, has developed itself so that the problem of designing a suitable house for such a purpose has become a definite one. Perhaps one of the most successful so far established is that at Burlingame, Cal. In presenting a plan to THE BRICKBUILDER I have followed in general the lines of that club.

The house itself, besides providing the usual comforts of a country home, must allow for large gatherings at the luncheon hour, for which purpose a piazza 132 feet in length by 20 feet in depth on the southerly front should be the principal feature of the main floor. Here all members may assemble for luncheon, or to view the arrival of carriages, etc., overlook the golf links, or witness the annual open-air horse show, which is held immediately in front of the club, and on all occasions this piazza would be the center of activity in country club life.

Entering the house, the main hall is ample for evening gatherings, and, combined with the reading room and dining room, makes a spacious floor for the annual club or hunt ball and for the usual private balls that occur from time to time.

Such a club does not require a large dining room, the number dining there generally being limited to those members who live in the near-by city, the majority of whom return to the city for dinner and to keep other engagements.

Besides the usual rooms, which, of course, include a billiard room, reading room, service departments, etc., the squash court is an essential feature, also locker rooms for golf players.

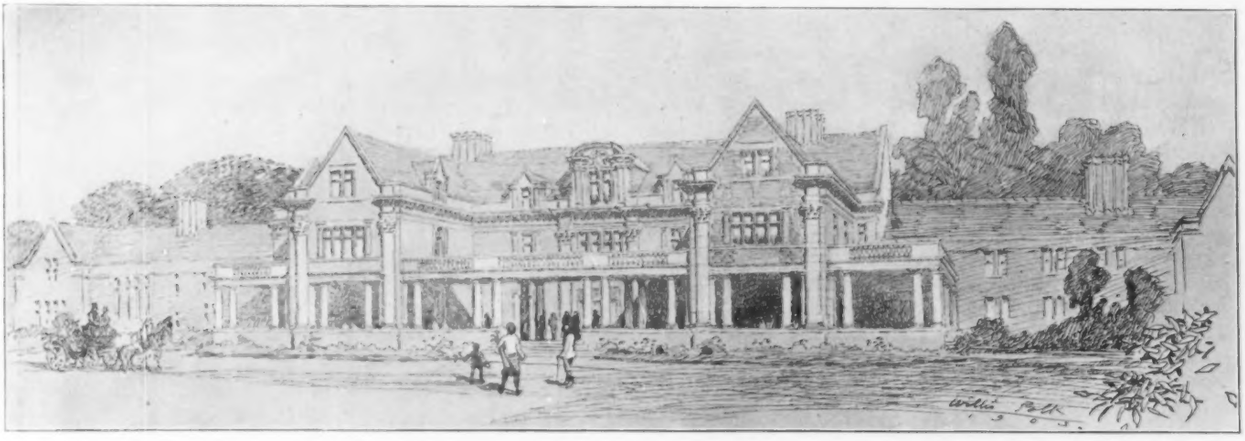
A private reception room, dressing room for ladies, and a staircase to a limited number of bedrooms must also be provided.

Besides the principal club building, stables should be so arranged that the club coach and bus and other necessary vehicles may be housed, with stabling not only for club horses, but for about twenty polo ponies. Kennels should also be built for fox hounds, with a cottage for the keeper.

Besides the polo field and golf links, tennis courts must be laid out.

To carry out such a project would require an expenditure of $150,000 as follows:

100 acres of land at $300 per acre	$30,000.00
Water system and sewerage	10,000.00
Gardening	10,000.00
Club building	75,000.00
Furnishing	10,000.00
Stabling	15,000.00
Total	$150,000.00



A SUBURBAN CLUBHOUSE. Willis Polk, Architect.

The funds could be provided as follows:

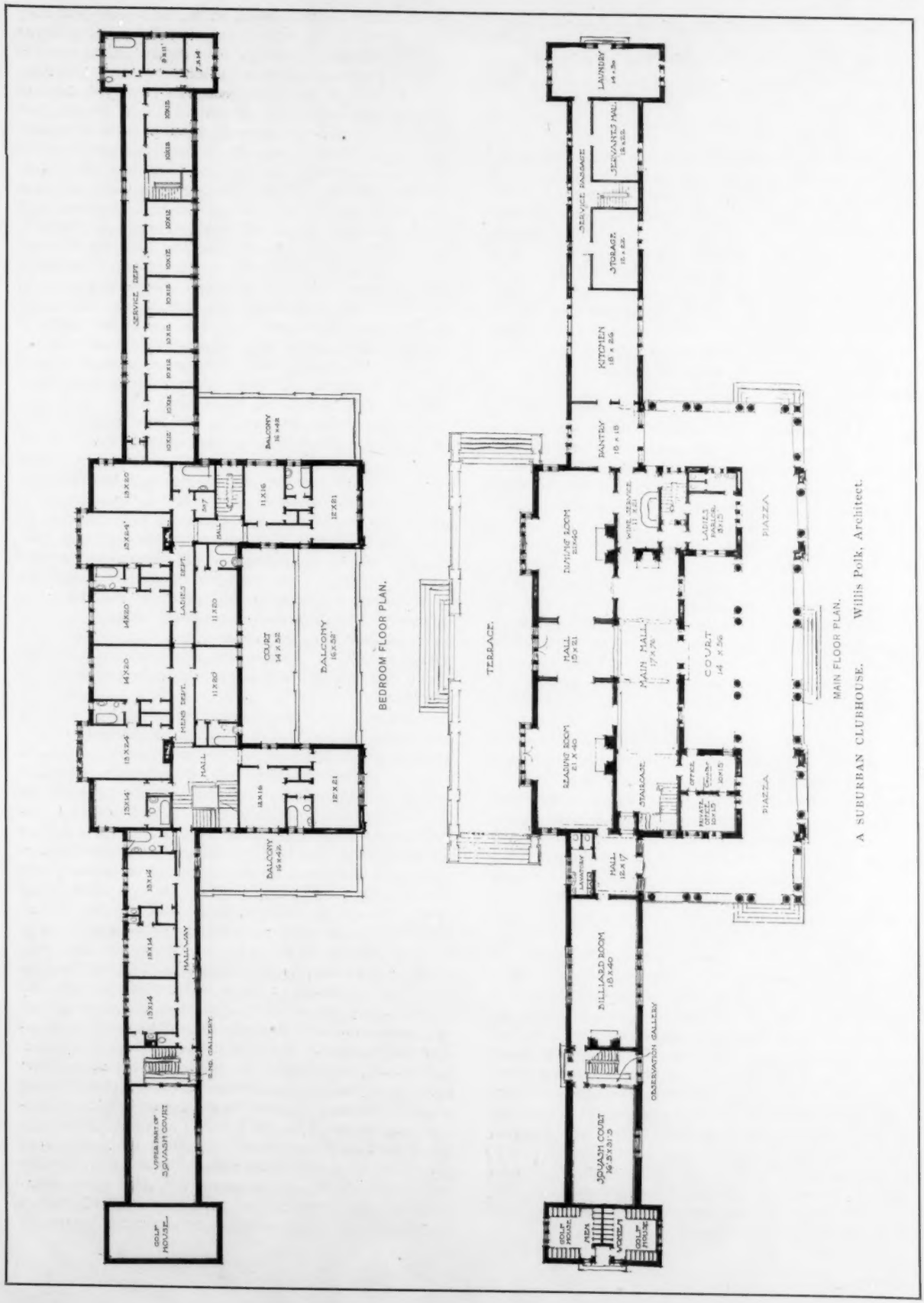
300 charter members at $250 each,	$75,000.00
Bonds secured by property and improvements	75,000.00
Total	$150,000.00

Maintenance:

Dues from 300 members at $5 each per month	$1,500.00
From which interest on the bonds could be deducted at the rate of, per month	375.00
Sinking fund to retire bonds, per month	375.00
Fixed expenses of the club, per month	750.00
Total, per month	$1,500.00

Beyond that the restaurant ought to maintain itself and afford with the bedrooms a profit as well.

Fees from the squash court, tennis court, stabling, polo field, etc., should make all these departments independent.



A SUBURBAN CLUBHOUSE. Willis Polk, Architect.

Architects' Specifications According to the Practice in the City of New York I.

BY JOHN CASSAN WAIT.

ARCHITECTS' specifications are to be recognized chiefly by the character of the individuals who prepare them, as exhibited therein, and are not as a rule to be distinguished by features peculiar to any locality. The specifications in use in the city of New York are familiar to the author, and he therefore limits his criticisms to the practice in that city, but with the feeling that without doubt like stipulations prevail in the specifications of other cities, where architects will have an equal interest in their construction and effect. It seemed also appropriate to take the specifications in use in New York, as they are probably most followed and copied throughout the country at large.

The author being in the position of a critic, and being required in his office as assistant corporation counsel in charge of contracts, etc., constantly to seek and to point out the objectionable features of contracts and specifications, he begs to be forgiven if he has not described the excellent qualities belonging to the practice of New York architects. It may, however, be understood, without saying so, that those features which are not criticised are considered good.

It is the practice among architects in New York to provide in their specifications that the drawings are to remain the property of the architect and are to be returned to him or accounted for by the contractor before the final certificate for payment will be issued, and the architects expressly reserve to themselves all rights in and to the said drawings. This clause, if interpreted to mean that the contractor shall return all blue prints, drawings, sketches, etc., by which the building or structure has been erected (and I regret to say that it is frequently so construed by architects), is a burden and unreasonable provision in a contract, for the reason that it takes from the contractor his best evidence of the instructions, directions and orders which he has received from the architects during the construction of the building. As well might the owner or the architect require that the contractor should surrender the contract itself, for the drawings are usually, by express provision, made a part of the contract. Some architects also require that specifications shall be returned before the final certificate will be issued. This is going a step further.

If extra work has been ordered or damages have arisen from the wrongful or neglectful acts of the architect, it is extremely doubtful if any court would enforce this provision, for such drawings and specifications are always produced in multifold copies, and there is no ostensible reason why such drawings and specifications should be surrendered by the contractor, at least until all differences and litigation arising out of the contract have been settled or determined. That cannot be until the final certificate is issued and the contractor is paid in full for his work. Such a clause is unreasonable and reflects upon the architect, unless he can explain his purpose in inserting the provision.

It is the popular belief among architects that they have a right to and in the incorporeal designs or creations embodied in their drawings, not only as against the contractor, but as against all others, in some instances even as against the owner who has employed them to prepare and make such drawings. This question had not been determined squarely by any court of record, but it was recently decided in the Appellate Division, Second Department, of the New York Supreme Court, which held that "Where the architect prepared plans and specifications for a client, for which he was paid his fee, and said plans and specifications were filed with the building department of the city in which the residence was constructed, the architect thereby published the said plans and specifications and had no further property rights in them sufficient to entitle him to recover for the subsequent use thereof in the construction of another building by a third person, and if there was any property in said plans and specifications after their publication, it was in the client and not in the architect." (Wright *v.* Eisle, 83 N. Y. Supp. 887.)

In view of this decision it would seem necessary that architects should copyright their plans if they hope to retain any rights in the incorporeal designs displayed or shown. If the architect has no common law rights in such plans and specifications, the stipulation referred to and which is so popular with architects would seem to be of no force, and if it be used with knowledge of such decision of the courts there would seem to be but one natural conclusion, viz., that it was used to protect the architect and the owner from litigation on the part of the contractor, and therefore is a weapon with which to drive the contractor to at least an amicable if not an enforced settlement. Such practices are to be regretted, and the use or this clause should, in the opinion of the author, be abandoned.

Another practice among architects which leads to strife and is unfortunate for the contractor is that which reserves to the architect the right and power to select the subcontractors. This is particularly burdensome to a contractor who has been required to compete with other bidders for a public work or for private work let to the lowest bidder. When contractors have made such proposals they are usually based upon bids obtained from subcontractors and material-men and the aggregate of which, with a percentage of profit, comprises the builder's proposal. Such being the case it is unreasonable and arbitrary for an architect to insist upon any particular subcontractor, or to refuse to approve of those subcontractors who have submitted bids to the principal contractor. It takes from the contractor the benefit of prices and conditional contracts which he may have made at advantageous rates or prices and places him at the mercy of the architect and his favorite subcontractors. Business cannot be done fairly upon such a basis, and a stipulation which gives to an architect the arbitrary selection of subcontractors and material-men under a contract awarded to the lowest bidder is mischievous, unreasonable and unbusinesslike. Architects may insist that this clause is a beneficial one to the owner and to the work, as it empowers the architect to dismiss and get rid of irresponsible and disagreeable subcontractors, but it is contended that the contract usually makes provision for this very situation, and that the contractor

should be made solely responsible, and all business and work should be done through him and his authorized superintendent, and the architect has no right to interfere, molest or dictate to the employees, servants and subcontractors of a principal contractor unless they commit depredations, trespass or assaults, for which they are amenable to the law, and that this may better be provided for by a stipulation to the effect that the architect may dismiss employees of the contractor if, in the opinion of the architect, they are drunken, disorderly or disposed to foment trouble.

There are other and further objections to the use of this clause, one of which is that if the architect, as the agent of the owner, be permitted to select subcontractors or even to approve of them, it may destroy the character of an independent contractor, which is the principal object of making and executing a contract for public or private work. The groundwork upon which the owner escapes liability by letting his work to an independent contractor is that he has not the selection of the servants and workmen, skilled or otherwise, who do the work and commit the wrongful act, and that he has not control of such persons. If therefore the architect, as agent of the owner, has the selection and control of such employees, the owner is responsible for their acts or neglect.

Another unfortunate stipulation in the specifications of architects for public work is to the effect that the architects may, in their discretion, substitute other and different building materials and different apparatus, fixtures, appliances, etc., provided the market price thereof be the same as the material or equipment specified. Some of the objections of the foregoing paragraph apply equally to this provision. The contractor may have made terms and obtained prices for a certain class or brand of material or for the product of a certain manufacture, and at low prices and under favorable circumstances. To deprive the contractor of that advantage, when he has based his proposal or estimate upon such prices and advantages, is extremely unreasonable and places him in a position wherein he may be taken advantage of by the architect; or if he be a favorite contractor, changes may be made greatly to his advantage; thus giving to architects powers and privileges of determining who the builder shall be or who shall be the lowest bidder, for the reason that after contractors have had one unpleasant experience they will refuse to bid for the work of the same architect, thus depriving the owner of free competition and giving to the architect a reputation with everybody to whom the contractor may freely express himself. Of course it is well understood that architects defend this practice by alleging that frequently materials cannot be had such as are specified, or that the whims or tastes of the owner may require the change. The answer to that is that if the owner's tastes change with the wind or weather, he should pay for such whims and fancies, and not the contractor, who is not responsible for them; and that if such materials cannot be obtained, then certainly the contractor is not likely to insist upon furnishing them. If, on the other hand, the architect has discovered, upon further study or observation, that the materials which he has specified are not the best for the purpose and that he wishes to change, then again the owner should pay for such lack of previous knowledge or observation, and should pay for the better class of materials determined upon, or for the more important apparatus or fixtures, and not the contractor who undertook to do only what the contract and specifications required and in the precise terms thereof.

Architects, in their desire to protect the interests of their clients, are likely to forget that the contractor has equal rights so far as the contract obligation holds or binds, and that, if any one is to suffer from the errors or lack of foresight of the architect, it should be and must be the client who employs him, and that his reputation is as much in the hands of contractors who may be called upon to do his work as in the hands of the owner who employs him, and that no architect can long exist who stands in the eyes of contractors as a dishonest, incompetent or arbitrary and unreasonable man.

The specification of patented or proprietary articles and materials is a subject deserving of the careful consideration of architects, and there is no part of an architect's specification that is the subject of more variety and more entertaining reading than this specification of particular brands and qualities of materials. The difference of opinion of educated and talented members of an honorable profession in this particular is surprising, and especially to one who has daily to study specifications of different architects for like materials. What one architect specifies and declares to be the best, another condemns and would not have; and what one's experience teaches him is totally unfit for the purpose, another will declare is the only material in the market which can reasonably and properly be specified. This condition arises in the subject of cements, both Portland and Rosendale, and as architects usually specify cements by name of the manufacturer or the brand, it is, to say the least, amusing to compare their specifications.

This practice of specifying materials by their trade names is to be deplored, and especially if it be not accompanied by a specification of tests of the strength, durability and wearing qualities of such materials. Materials cannot be judged by the name; as frequently, either from a lack of care in the manufacture or the failure to properly protect and preserve from weathering, they are inferior and sometimes worthless. When specified by the name alone the contractor has fulfilled his obligations by furnishing the brand described, and if they prove defective and worthless the owner has no remedy and no defense to the claim of the contractor for the contract price. Cements are often injured in the burning or by exposure in the process of grinding and packing, and may be sent out without discovery on the part of the manufacturer. Nevertheless, if the contractor supplies the brand required by the specifications, he cannot be held responsible for the quality or sufficiency of it. To avoid this many architects refrain from specifying the brand or kind of cement, but require that it shall conform to the tests specified and required by the American Society of Civil Engineers, which printed tests are frequently given in the specifications. These tests require cement to be of a certain fineness and tensile strength and certain properties of temporary and permanent setting, and any cement which meets the requirements thereof should meet the favor and approval of architects.

Another practice of architects is to specify particular types of apparatus, fixtures and equipment by reference

to figures or pages of trade catalogues, which catalogues show in detail the products and appliances of a particular manufacturer. This may be done for private work, but it should not be the practice for municipal and state work, where there are ordinances and laws forbidding the purchase of patented and proprietary articles, as it gives to certain manufacturers an advantage in obtaining the award of the contract, which may be required to be given to the lowest bidder. If, on the other hand, the provision against patented articles be applied to the details of a building it becomes vexatious and annoying, as nearly all building materials, fixtures and appliances are the subject of a monopoly if not of patent right and copyright; and when the materials themselves are not the subject of a monopoly the machines upon which they are made or produced are likely to be patented; in which case, under a recent decision of the Supreme Court of the state of New York, they cannot be used under a provision of a charter providing that

"Except for repairs, no patented pavement shall be laid and no patented articles shall be advertised for, contracted for or purchased, except under such circumstances that there can be a fair and reasonable opportunity for competition, the conditions to secure which shall be prescribed by the Board of Estimate and Apportionment."

Under this provision of the charter it was held that expanded metal could not be specified in a contract for a fire house, notwithstanding the fact that the original patents on expanded metal had expired and that the patent on the original machine had lapsed, and that the United States court had declared that the original idea of manufacturing expanded metal had been anticipated by another than the parties who at present control the output of expanded metal, and that the patent had been declared invalid. The ground upon which the decision was based was that the machine, by which this particular expanded metal described as weighing eighty-five pounds per hundred square feet was made, was covered with patents, and that in consequence of the raw material being so thick, no one else had designed a machine strong enough and heavy enough to cut, slit, expand and stretch the material in one operation, as is done by those machines owned, patented and controlled by the expanded metal companies. If this decision should be extended it would seem to deprive the city of the privilege of purchasing the most common necessaries of life and the most ordinary building materials. Boots, shoes, nails, sugar, structural iron and nearly everything comprising a building are doubtless made upon patented machines or by patented processes. A reasonable interpretation of the law requires that all materials should be specified in the alternative so as to open the competition to at least two manufacturers or producers.

Architects' specifications as a rule are drawn in the most concise and abbreviated manner that the circumstances will permit. Sentences are begun without subjects, and where contractors and subcontractors, plumbers, carpenters, etc., are mentioned in the same chapter it is frequently confusing and sometimes impossible to tell who is to undertake to do and to perform certain classes of work. Instead of saying that the contractor, the plumber or the carpenter shall do certain work or provide certain materials, sentences are begun somewhat after the following manner: "Paint all ironwork with two coats of red lead and pure linseed oil," etc., or provide that "All materials, articles and utensils necessary for," it not being stated who shall paint or who shall provide, etc. Another weakness in the specifications of architects is that they are not imperative. They recite that the contractor, painter or plumber *is to* do certain things, instead of that he *shall* do said things; or that the carpentry *is to be* first class, instead of saying, in the future imperative, that the carpentry *shall be* first class. Another omission in architects' specifications which is general is the failure to number the paragraphs so that they may be referred to without needless description. Upon the work, in the office and in court, it is frequently required to refer to parts of contracts or specifications, and it is therefore a great convenience to have the paragraphs numbered or lettered. A good practice prevails in the departments of the city of New York, where the contract clauses are lettered and the specification clauses are numbered.

An architect's specification is usually calculated to describe and specify the materials and work which shall comprise the building, and the contract is to describe the contractual relations and obligations assumed by the contractor to the owner and *vice versa*. If architects would appreciate this and confine their attention in the specifications to the materials and work, and leave questions of their powers and the contractor's general obligations, provisions as to time, delay, extra work, payment, the requirements of the law and ordinances, to the contract, they would save much litigation and trouble, especially in contracts with muncipalities, the state and the United States. Many of the contract clauses of municipalities are inserted in contracts, because they are required to be inserted by the charter of the city or by the laws of the state or ordinances of the municipality. It is a good practice to use in such clauses the precise language of the act or ordinance or clause of the charter which requires it, or to employ language that shall meet the construction placed upon such clauses by the courts in their decisions. When the law department of a municipality has given perhaps years of attention and close study to framing such clauses, it is extremely annoying to have architects rewrite such contract provisions in their specifications and to render the clauses in the contract ambiguous and uncertain by modification. Many architects, who consider only their own protection and powers, seek to enlarge upon the provisions of contracts by being more explicit or more exacting. This is especially true of clauses giving them the power to dismiss unpleasant employees or to select subcontractors or to determine questions of acceptance or rejection of material and work. The results of reserving to the architect increased power to accept or dismiss employees has already been discussed. It is suggested that one general clause in the contract giving to the architect the powers of an arbitrator, to determine any and all questions as to the work and materials and as to the interpretation and construction of the specifications, and that the work or any part thereof shall be done to the satisfaction of the architect, is sufficient without repeating it in every specification for every class of work, and that the constant repetition of such powers and privileges does not add anything to a general provision in the contract.

Fireproofing.

SETTING OF TERRA-COTTA FIREPROOFING.

NEW YORK, May 12, 1904.

EDITORS OF THE BRICKBUILDER.

Dear Sirs: I have read with much interest the editorial in your April number on the setting of terra-cotta. What it says of the bricklayers rather falls short of the truth, particularly so far as it speaks of our men in New York. I beg leave to make reply, and ask that the same find space in your coming issue. The recent trouble in our trade in this city had only an imagined connection with the subject of fireproofing. I shall not presume to take up you space with any recital of the causes that brought about this difficulty; sufficient is it to say that the question of fireproofing had no part in it. It may interest you to know that the convention held by our parent body at Trenton in January ordered, in effect, that manufacturers of fireproofing may set their own material, and that our members may work for them so long as they subscribe to the rules and conditions agreed to by the regular contractors. True, this order has stirred up some feeling in this city, the only one, to my knowledge, affected by it; and, without any desire to enter into the merits of the case, this was to be expected. Any one taking a contrary view would need to be informed that the clause, or a similar one, had been included in the agreements between the mason builders and the bricklayers' unions of New York, which they have had consecutively during the past twenty years; and that anything that would set any sort of restriction on these agreements was liable to cause some feeling. However, this feeling, so far as I am informed, is gradually lessening. It should also be understood that this clause, like the others in these agreements, was, needless to say, inserted by mutual consent, and of course regarded as of mutual interest.

It is not necessary that the fireproofing companies should carry about the country men who do fireproofing exclusively, and any attempt to introduce this system into New York the bricklayers here will, in all likelihood, resist most vigorously. What they fear is, that, if this system be permitted here, men who are not bricklayers will gradually get into the work, and finally seek work in different parts of the country as competent bricklayers. It is pretty well understood that this has happened in other cities. Our New York men feel that they are able to do this work quite as well for the fireproofing companies as they have been doing it for the mason builders. And this is my personal view of the matter, for I also have had some experience at this work, and the only difference I have been able to see was, that the men who are sent about the country are somewhat faster than local men. But where there is plenty of this kind of fireproofing (the only kind, we all agree) the local men very quickly develop equal speed.

I am in entire agreement with you that much of the inroads made by the so-called fireproofing systems are explained largely by the slipshod manner in which the real fireproofing has been installed. But I am far from being so when you state that this poor workmanship is chargeable to the workmen. Far from deploring unfilled joints, etc., quite a number of superintendents drive the men so hard that quality is sacrificed almost entirely to quantity. This charging the workmen with all the sins of poor construction is mere subterfuge. Only the other day a contractor in Philadelphia advertised for men, stating that no men with plumb rules need apply. Whether it is fireproofing or the building of walls, the average workman strives to do at least fairly good work; and when work of an inferior quality is seen it should not be charged up to him, but to the rushing methods that have done so much to injure the best interests of the building industry.

EDWARD A. MOFFETT,
Editor The Brickbuilder and Mason.
(The official journal of the Bricklayers' and Masons' International Union.)

The last paragraph of this letter is of special interest as touching really the vital point in regard to the setting of terra-cotta. It is not fair to charge the mechanic with all of the poor workmanship which is so often found in connection with some forms of fireproofing, and we are fully aware that the fault is quite as often due to the urging of the superintendent. We believe the average workman really strives to do at least fairly good work, and that as far as his experience and knowledge can carry him he would rather turn out a good quality of masonry, whether fireproofing, brick or terra-cotta, than to be a party to slipshod, indifferent ways; but Mr. Moffett's letter is a strong argument in favor of restricting the setting of terra-cotta fireproofing to the employees of the companies who manufacture the product. In proportion as the responsibility for the work is carried away from the manufacturer, away from those who are interested in having their product presented in the best manner, so will the tendency to haste and resulting carelessness be predominant. It is exactly the superintendent who wishes to hurry his work, who does not want "men with plumb rules," to which we object. In most of our large modern work the mason is a subcontractor, is directly responsible to neither the architect nor the terra-cotta manufacturer, is the one from whom the architect and the owner have most to fear, and is often unfortunately the one with the least incentive beyond the financial one involved in his contract. If organized labor can bring about such a separation of mechanics that trained labor can be put to its best uses we would be the first to welcome it.—EDITORS.

SAFES AND VAULTS IN THE BALTIMORE FIRE.

WE print herewith a very instructive letter written by Mr. George L. Damon, the eminent safe and vault engineer, and which will be read with much interest by every one who has followed the reports of the Baltimore fire. The damage to well constructed vaults on account of fire has been surprisingly small in all the recent large conflagrations, and the science of vault construction must be admitted as being upon a perfectly reliable basis.

BOSTON, May 4, 1904.

Dear Sir: Doubtless you feel interested to know how the bank vaults of the fire district of Baltimore stood the test, their construction, etc. I have spent much time in the ruins, minutely studying results, not only regarding vaults, but "safes" in general. It was my privilege to personally inspect like work in Portland, Chicago and Boston, object lessons from ruins aggregating an area of more than six hundred and fifty acres, with losses upwards of five hundred and twenty-five million dollars.

The contents of the twenty-two burned national and savings banks' and trust companies' vaults were in every instance found to be in perfect condition. A majority of the vaults were of comparatively recent construction (five being of my own fitting up). A few vaults were located in basements, others on first, and still others on second floors. In each case the fireproof protection was

of surrounding walls averaging about sixteen inches in thickness, built up solidly of hard brick, laid in cement, free of any built-in ironwork strengthening. All the vaults were supported on brick foundations built up from cellar bottoms. Several of the vaults were unfavorably located, subjecting them to a degree of heat hardly imaginable. In one of the latter was found an illustration, showing that at some time during its test the interior temperature had been sufficient to cause the upper portion of a candle left in the top of the safe to bend over and rest in the pan of its holder.

The contents of a large number of mercantile vaults were intact, but there were also many losses resulting from faulty and cheaply constructed doors, and in several cases where fairly good doors had not been properly secured to masonry; losses resulted also where vault doors and vault walls were so connected with the falling building walls that they fell with them.

There were no bank or mercantile vaults with fireproofing constructed of concrete, as some vaults have very recently been constructed in other localities. The ruins show total destruction of plastic and coarse mixture materials to an extent that would lead me to place unqualified reliance in no fireproof vault construction other than hard burnt brick, honestly laid in best cement. With good brick and cement furnished a mechanic, there is not the possibility of improper work, as might follow in the formation of concrete. Both constructions costing practically the same, and considering the all-important fact that the only materials which resisted extreme heat were those manufactured by heat, such as brick and terra-cotta, the preference in construction is decidedly in favor of brickwork for absolute fireproof protection. Ironwork of any kind incorporated in or forming part of fireproofing structures, expanding, causes cracking and weakening of walls, vitally impairing their security in a conflagration of magnitude.

Vaults properly constructed of brick on second and third floors possess unquestioned security against such fires when built up on brick foundations extending from the basement, not substantially connected with the main walls of buildings, and free of built-in ironwork.

As to results with portable safes, called "fireproof": Carefully collected statistics gathered in the Boston fire showed that sixty-eight per cent of their number were a total loss. I believe that the percentage of loss was as great in the Portland and Chicago fires, and that the loss was fully as large, if not greater, in this fire, again establishing the fact that the protection such safes afford is measured by a limited exposure to heat, and that absolute protection exists in nothing short of brick vaults with substantially constructed iron vestibules having inside and outside doors provided with properly designed and proportioned bolt work.

The contents of a large number of safes were lost by their being opened before they had been allowed a sufficient time to cool off. Caution should be exercised in opening vaults and safes which have been subjected to a great heat.

GEO. L. DAMON,
Safe and Vault Engineer.

THEATER FIRE PROTECTION.

THE Iroquois Theater disaster of last winter aroused such widespread distrust of present conditions and laws relating to theater construction that in nearly every large city and most of the states of the Union many measures were introduced to amend or repeal existing statutes. Massachusetts was one of the first to consider the matter, and from public and private incentive a quantity of very ill-considered legislation was proposed, all of which was referred to the Committee on Cities. This committee has finally reported a bill to provide for greater protection against fire in theater buildings. It is so difficult to persuade the average legislator that he does not know everything about every possible measure that could come before him that there is no wonder the bill should show such evident marks of unbalanced judgment and insufficient provision. The committee had given a number of hearings to those who were interested in obviating the manifest defects of the present laws, and the Boston Society of Architects, through its legislative committee, had strongly seconded the recommendations of the governor that all these bills, together with other measures tending to further modify the general provisions of the bulding law, should be referred to a special commission of experts. Apparently such advice has not been followed, and the measure if enacted would mean a distinct lowering of the standard of theater construction in the larger cities, a loss which would not be compensated for by the raising of the standard for such structures elsewhere.

There are a few good points about the proposed measure. The bill strictly defines a theater, a definition which is lacking in the present law, and in its application the law would extend to any auditorium capable of seating four hundred or more persons instead of eight hundred, as at present. There is nothing said in the law about fireproof construction, but it does require that all scenery and stage woodwork shall be thoroughly soaked in fire-resisting material. This is already called for in all of the large cities, but as far as we know has never been enforced. The new law provides for illuminated sign exits, for a water curtain and two-inch standpipe. According to this law the proscenium may be of other material than brick, and is not necessarily carried up above the roof. Beyond these few points the law simply takes some of the general provisions already incorporated in the Boston law and extends them to the whole state; but as this law will apply to all cities quite as well as to the small towns, the probable inference is that the present Boston law will be superseded thereby.

The building law of Boston is far from being adequate for its purpose, but it has some provisions entirely lacking in the new law and which ought not, under any circumstances, to be abrogated. Every theater in Boston must be a first-class structure, namely, of so-called fireproof construction throughout. The new law will allow theaters to be built with wooden floor beams and ordinary combustible cellular construction. The Boston law does not allow a theater to be built with a stage more than five feet above the level of the principal street. According to the new law a theater can be constructed at the top of a ten-story building. The Boston law provides certain wise, if slightly ambiguous, conditions as to access to the theater, stipulating that it shall have a frontage the entire width of the auditorium and passages upon a street, court, passageway or area open to the air and at least thirty feet wide opposite the whole frontage. According to the proposed law a theater could be built in the center of a great block of buildings, where it would be extremely difficult for the fire department to combat even a small blaze. The only clauses in the new law which are not already in the Boston law appear to be the exact definition of what

constitutes a theater and the requirements for illuminated exit signs.

We sincerely hope this law will fail to pass. Human life is just as precious in a small town as in a great city, and its value is often even greater, while the liability from fire, and certainly the danger from panic, are, we imagine, on the whole rather greater in the smaller community. We do not believe that it is a fair argument that small towns cannot afford the price for fireproof construction of a theater. In many of our large cities there are fireproof theaters which are run successfully on admission prices ranging from ten to seventy-five cents, and in which the average attendance is by no means more than could be expected in smaller cities ; and the extra cost of building a theater fireproof is not enough in the long run to render impossible a safe investment from the real estate standpoint. The suggestion has been made that there should be two laws, one pertaining to the large cities and the other to the smaller ones, but the difficulty about this is that our small cities are very apt to grow, and the danger element in any auditorium is not measured by the size of the town in which it is located, nor even wholly by the size of the audience, but is preeminently a factor of constructive and exit conditions.

The great trouble is not that our laws are at present inefficient, but that they are not efficiently administered, and the legislative committee has met this by a report of a bill on the petition of Edward Atkinson to provide for the inspection of theaters and public halls, which would make the parties obtaining the licenses civilly and criminally responsible for non-compliance with existing laws, and which provides that the licensing officer shall make a complete inspection of all such places at least once a month. There ought to be no reasonable objection to this law. As a matter of fact, the authorities under the existing laws could exercise just such powers, and it is to be questioned whether additional legislation will necessarily secure better enforcement of the laws, but at least such a law could do no harm and would often strengthen the hands of a zealous and public-spirited official.

PROTECTING THE CONTENTS OF A BUILDING.

BEFORE the Baltimore fire a fireproof building would have been defined as one in which all the structural steel was protected with at least one inch of terra-cotta set in cement mortar, in which the amount of wood was limited to finish and the upper and under floor nailed to sleepers, and in which the exterior walls were faced with brick or terra-cotta. It would have been commonly stated by nine architects out of ten, at least, that a fire could not cause material damage within or without such a structure; that while it might catch from without and its contents be partially consumed, the fire would spread very little, if at all, from story to story, and each room would simply burn itself out without affording an opportunity for fires to spread through it to adjoining structures. Fireproof materials have abundantly demonstrated their ability to protect the steel frame and, used on the exterior of a building, to withstand a very considerable amount of heat without material damage. But from the point of view of the tenant who hires an office in such a structure, and tells his agent that because he is in a fireproof building he does not need to carry insurance on the contents of his offices, it is not enough to merely protect steel in which he has no personal interest. The education of the country proceeds slowly. We have seen intelligent business men who have visited such ruins as to-day exist in Baltimore, and have come away with a freely expressed belief that because the contents were all consumed, therefore fireproofing involved a needless waste of money. That is thoroughly selfish, every man for himself and the insurance companies will pay the bill policy, which needs only to be stated to be condemned. The right way is to admit that in our large fires the fireproofing methods have never been able to do any more than protect the frame, and that therefore in all our congested business districts we simply must be more careful about the contents of our buildings. This is not an impossibility. It is a practical necessity which every man ought to be obliged to recognize. The owner and the insurance companies can make the frame, the structure and even the finish practically incombustible. It is the duty of the city authorities to insist upon the diminution of the fire risk by the elimination of inflammable contents, and their right to do so ought to be just as unquestioned as the right to prohibit the storing of gunpowder or naphtha.

FIRE LOSSES.

We give herewith a diagram illustrating the aggregate fire losses in the United States for the twenty-eight years from 1877 to 1902. The solid black line shows the property loss, the broken line the insurance loss. The total of property loss for this period is $3,092,630,171.00,

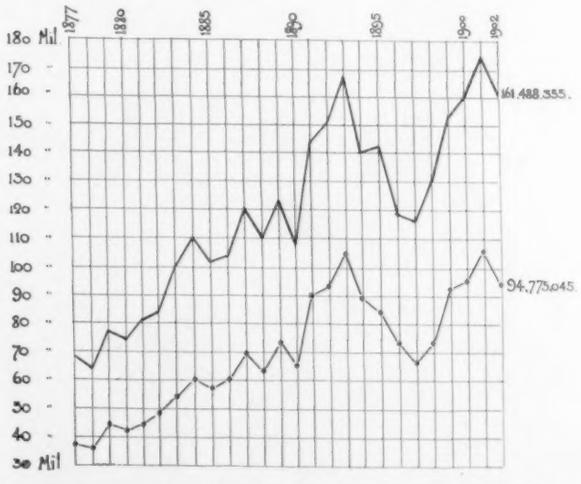


DIAGRAM SHOWING PROPERTY AND INSURANCE LOSSES BY FIRE, 1877-1902.

while the insurance loss amounts to $1,828,539,628.00. During the past ten years the average loss has been $146,000,000.00, or, relatively speaking, a tax of about $9.00 upon each family in the United States. This is a pretty stiff bill to pay for what in the vast majority of cases was preventable.

Editorial Comment and Selected Miscellany

THE STANDARD SIZE BRICK.

BY H. D. SEARLES-WOOD, F. R. I. B. A.

THE Royal Institute of British Architects' standard size of bricks is the outcome of the measurement of bricks all over the United Kingdom, and the size may be fairly said to be an average of the London stock sizes.

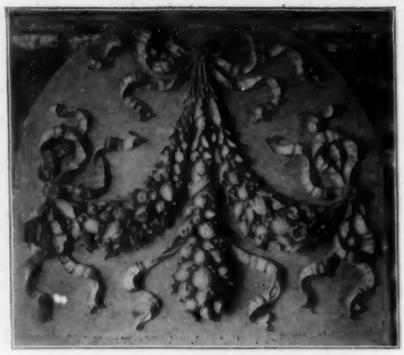
The whole reason for a standard size is to have bricks that will bond even when they are gathered from different parts of the country; the Royal Institute of British Architects is now in communication with the manufacturers of glazed bricks, with a view to the standard being equally applied to this class of bricks, for in using glazed bricks at the present time great difficulty is experienced by those who wish to make good sectional bond, and some serious failures have occurred in walls built with glazed brick internal facings and ordinary walling bricks at the back, owing to the unequal shrinkage of the mortar joints, due to the fine joint of the glazed bricks and the thick joint of the ordinary brick necessary to make them work with the courses of the glazed bricks.

KEY AT ENTRANCE.
J. H. Freedlander, Architect.
Excelsior Terra-Cotta Co., Makers.

INGALLS BUILDING, CINCINNATI, OHIO.
Elzner & Anderson, Architects.
William H. Ellis & Co., Builders.

Except in the lower stories this building is laid up with a light granite, satin finish enameled brick made by the Tiffany Enameled Brick Co., and trimmed with a terra-cotta of similar finish furnished by the American Terra-Cotta Co.

Some architects are opposed to the depth of bricks being brought into the standard and to the mortar joint being regulated, but it is obvious if bricks from various districts are to be used together, the three dimensions of width, length and depth must all be fixed by the standard.



DETAIL EXECUTED BY ST. LOUIS TERRA-COTTA CO.

Other architects prefer the bricks which work five to the foot, and there is no reason why they should not have bricks made to any size that may suit their fancy, and if they preserve the proper proportion between header and stretcher, just as good bond can be made. There is not the slightest reason why the fixing of a standard size should prevent or hinder the production of any fancy sizes, and if the demand for them is sufficient there will be plenty of brickmakers ready to supply them.

On the other hand, the value of a recognized standard of size and method of measurement cannot fail to be of the greatest advantage both to the brickmaker and architect, and to such allied trades as the terra-cotta maker and mason.

The brickmaker who makes a standard article can rely on a larger market than the local demand, while the architect can employ various classes of bricks for different parts of his building, selecting each class of brick for the purpose for which it is best adapted, without any fear of getting bad bond and consequent loss of strength in his walls.

The terra-cotta maker can prepare his models on a scale that will make the terra-cotta bond properly when set in the wall, and probably in certain classes of work he could stock a sufficient quantity of terra-cotta to avoid the delay in delivery, which is the great drawback to its use at the present time. The mason, in the same way, can, when the standard bricks are used, absolutely rely on his detail in preparing his stones so that no making-up shall be required; the work, when it is set on the wall, rising truly and solid with the brick backing.

JEFFERSON HOTEL, ST. LOUIS, MO.
Barnett, Haynes & Barnett, Architects.
Built of gray Roman brick made by Hydraulic Press Brick Co.

The method of measuring the bricks, as set out in the standard, is as follows:

(1) The length of the brick should be double the width plus the thickness of one vertical joint.

(2) Brickwork should measure four courses of bricks and four joints to a foot.

Joints should be ¼ inch thick, and an extra 1-16, making 5-16, for the bed joints, to cover irregularities in the bricks. This gives a standard length of 9¼ inches center to center of joints.

DETAIL BY GEORGE F. PELHAM, ARCHITECT.
New Jersey Terra-Cotta Co., Makers.

The bricks, laid dry, to be measured in the following manner:

A. Eight stretchers laid square end and splay end in contact in a straight line to measure 72 inches.

B. Eight headers laid side to side, frog upwards, in a straight line to measure 35 inches.

C. Eight bricks, the first brick frog downwards and then alternately frog to frog and back to back, to measure 21½ inches.

A margin of 1 inch less will be allowed as to A and ½ inch less as to B and C.

This is to apply to all classes of walling bricks, both machine and hand-made.

The standard has been agreed upon between the Royal Institute and the Institute of Clayworkers, and has been draughted in consultation with these bodies and with representatives of the Institution of Civil Engineers.

DETAIL BY A. P. VALENTINE, JR., ARCHITECT.
Atlantic Terra-Cotta Co., Makers.

It has been ordered to come into force on May 1, 1904.

The council recommend that members should insert this standard in their specifications under the title of "The R. I. B. A. Standard Size of Bricks."

BORDEN BUILDING, FRANKLIN STREET, NEW YORK CITY.
Front brick furnished by Robert C. Martin & Son,
160 Fifth Avenue, New York.

HOUSE AT CHICAGO.
H. K. Holsman, Architect.
"Shawnee" brick made by Ohio Mining and Manufacturing Co.
Furnished by Thomas Moulding Co., Chicago, Agents.

BIG INCREASE IS SHOWN IN BUILDING OPERATIONS.

BUILDING for the month of April in twenty-three of the principal cities of the country shows a gratifying increase. Permits were issued, according to the official reports to the *Construction News*, for 10,046 buildings, at an estimated cost of $38,239,294, as against 7,849 buildings, at an aggregate cost of $31,453,976, for the corresponding period a year ago, being an increase of 2,197 buildings and $6,785,318 in cost, or an increase of twenty-one per cent.

Thirteen of the twenty-three cities show gains varying from twelve to thirteen per cent. Brooklyn shows the greatest prosperity, permits having been taken out for the construction of 963 buildings, involving $6,260,965, against 658 buildings, costing $2,645,870, for the same month a year ago, an increase of one hundred and thirty-six per cent. In the boroughs of Manhattan and the Bronx the increase is about twenty-seven per cent.

Cincinnati shows a gain of one hundred and thirteen per cent, as against the same month a year ago. Other cities in which remarkable increases are shown include Omaha, eighty-two per cent; Seattle, seventy-five; San Francisco, fifty-seven; Indianapolis, fifty-one; Memphis, thirty-two; Detroit, thirty-one; Los Angeles and Milwaukee, thirteen.

St. Louis shows the most remarkable decrease, sixty per cent. Buffalo has a decrease of thirty-two per cent; Minneapolis, twenty-eight; Cleveland, eighteen; St. Paul, nine; Kansas City, eight; Philadelphia, seven; Atlanta, six; and Louisville, three.

"In the leading cities the gains," says the *Construction News*, "are no more remarkable than in the small cities, from which it is impossible to obtain definite statistics. It is believed that the activity will not only continue, but in all likelihood will increase in volume from this on."

HOUSE AT CHICAGO, ILL.
Edmund R. Krause, Architect.
Covered with American S Tile, made by Cincinnati Roofing Tile and Terra-Cotta Co.

DETAIL OF BUILDING BY H. B. MULLIKEN, ARCHITECT.
Terra-Cotta executed by New York Architectural Terra-Cotta Co.

ROTCH TRAVELING SCHOLARSHIP.

THE Rotch Traveling Scholarship has this year been awarded to F. C. Hirons, who is an Englishman by birth but has been a Bostonian for the last twelve or more years. He began his architectural studies in the office of Herbert D. Hale, and supplemented his practical training by a special course at the Institute of Technology,

THE UNION BUILDING, ANDERSON, IND.
Richards, McCarty & Bulford, Architects.
Built of "Ironclay" Brick.

where he received the prize of the Boston Society of Architects for the most meritorious work in design. Mr. Hirons will be remembered as the winner of the prize of five hundred dollars offered recently by THE BRICKBUILDER for the best design for a small library constructed of terra-cotta. In all his work thus far he has shown exceptional ability and his record has been a most brilliant one. Mr. Hirons was also fortunate in winning a place in the final competition for the traveling scholarship of the Society of Beaux Arts Architects, but has surrendered his chance to accept the Rotch Scholarship. He will go to Europe admirably prepared for his foreign studies, and he ought to be able to send back work of a very gratifying character during his two years abroad.

WARD LINE BUILDING, WALL AND WATER STREETS, NEW YORK CITY.
Fireproofed with Burnt Clay throughout.

THE architectural competition for the Engineering Building and the Engineers' Club Building, New York City, has been finally arranged and a printed program has been issued by the committee in charge. The following six selected firms of architects are to take part in the competition, and each will receive the sum of $1,000: Ackerman & Partridge, Carrère & Hastings, Clinton & Russell, Lord & Hewlett, Palmer & Hornbostel, and Whitfield & King. If the design of one of these firms is chosen, the $1,000 payment will apply on his commission. In addition, any reputable architect or firm of architects which has been two years or more in practice may submit designs, and the best four of such designs

ENTRANCE, UNION BUILDING, ANDERSON, IND.
Terra-Cotta furnished by Indianapolis Terra-Cotta Co.

submitted will receive four equal prizes of $400 each. All designs must be submitted on or before June 20 next, and the examination and award will be made as soon as practicable thereafter. The architect in whose hands the work is placed will receive a commission of five per cent of the total cost of the work. The secretary of the committee in charge of the competition is Prof. F. R. Hutton, 12 West 31st Street, New York City.

BOOK REVIEWS.

AMERICAN RENAISSANCE. A Review of Domestic Architecture. Illustrated by ninety-six half-tone plates. By J. Wheeler Dow, architect. New York: Wm. T. Comstock. One large 8vo volume. Gilt top. Price, $4.00.

In taking up the subject of architecture in this coun-

PANEL FOR STABLE.
Louis Lehle, Architect.
Northwestern Terra-Cotta Co., Makers.

try the author has endeavored to show that, by adaptation of the various styles to the needs of our people, there has been developed a special style which he terms American Renaissance.

The popular idea of American Renaissance, if the term were ever to become general, would be represented by the sumptuous estates of America recently erected in great numbers by millionaires; but strangely enough, it would seem, after a perusal of this latest commentary, that most of this distinctly modern architecture was designed in defiance of the vital theory of a dwelling-house, namely, the Anglo-Saxon home principle, and that it expresses American ostentation more often than American Renaissance.

The author subdivides the subject into well-defined periods, such as "The Grand Epoch," relating to the prosperity of the American colonies immediately preceding the Revolution and following it, and the "Reign of Terror," for instance, of exemplifying the culmination point of the outrageous circular work and the cupolas. The chapter upon "Adaptation" is particularly interesting.

As a book of reference the work is enhanced in value by a copious index, where every item of interest, every allusion bearing upon the author's theory of architecture has been catalogued. The selection of illustrations is especially noteworthy, embracing many rare and beautiful examples of American domestic architecture.

DETAIL BY JOHN E. SCHARSMITH, ARCHITECT.
Brick, Terra-Cotta and Tile Co., Makers.

DETAIL BY BARNEY & CHAPMAN, ARCHITECTS.
Conkling-Armstrong Terra-Cotta Co., Makers.

REMOVAL NOTICES.

The Excelsior Terra-Cotta Company, of New York City, has taken new offices in the Johnston Building, 1170 Broadway, corner 28th Street.

Barney & Chapman, architects, New York, announce the removal of their offices to 520 Fifth Avenue.

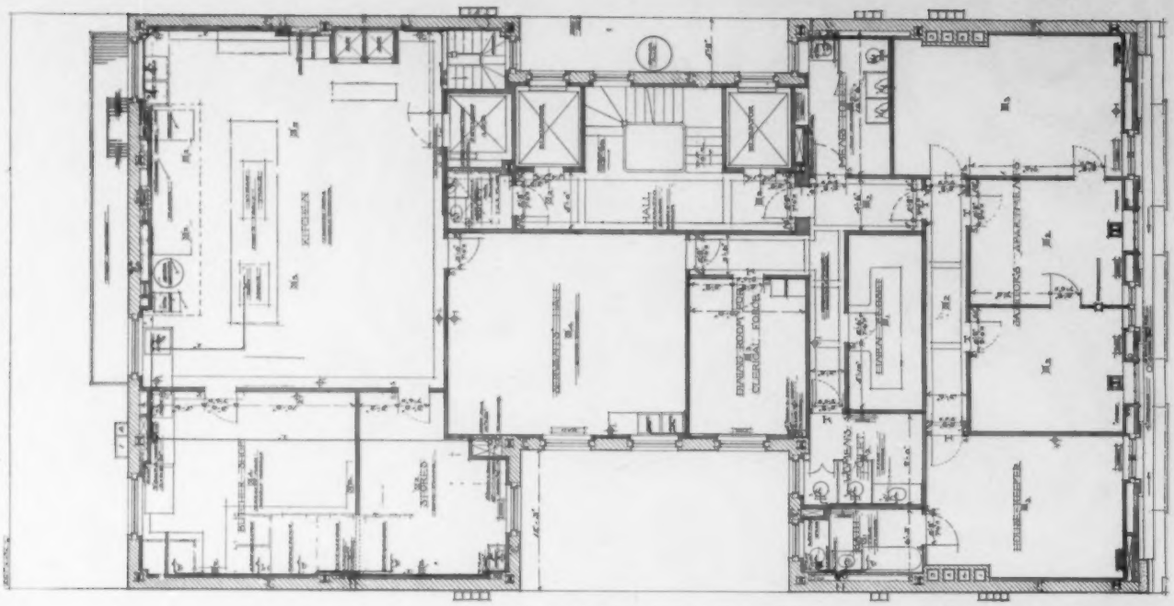
Thomas Nash, architect, New York, announces the removal of his office to 1170 Broadway.

STATUE EXECUTED IN TERRA-COTTA BY WINKLE TERRA-COTTA CO.

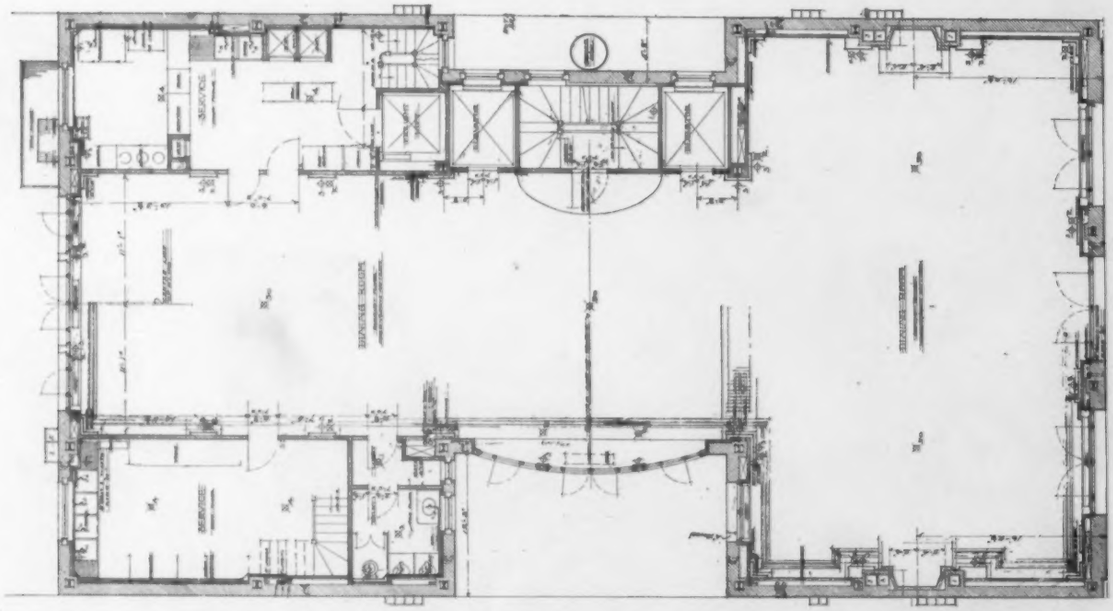
THE PARIS CONTEST IN WINDOW-SILL DISPLAY.

A PLEASING spring feature of Paris is the flowered window-sill contest arranged by a committee of architects and painters, including Philpot, Dagnan-Bouveret, Gervex, Cheret, Louise Abbema, Mlle. Dufau, Claude Marlef and others, and supported by Premier Combes, by the Minister of Fine Arts and by the Prefect of the Seine; the idea being to encourage masses of flowers on balconies and in windows to beautify Paris streets. At a given date the jury will travel all over Paris in a procession of automobiles, noting all the shows, from the humblest to the most elaborate, and will give awards proportionately to the taste displayed by the competitors and to the means they had at their disposal. Five thousand dollars will be distributed in prizes. The poor and rich alike are invited to take part in the contest, and the municipal horticulturists have agreed to supply seeds, bulbs, cuttings and pots of rich soil free to competitors who cannot afford to buy them. —*New York Tribune.*

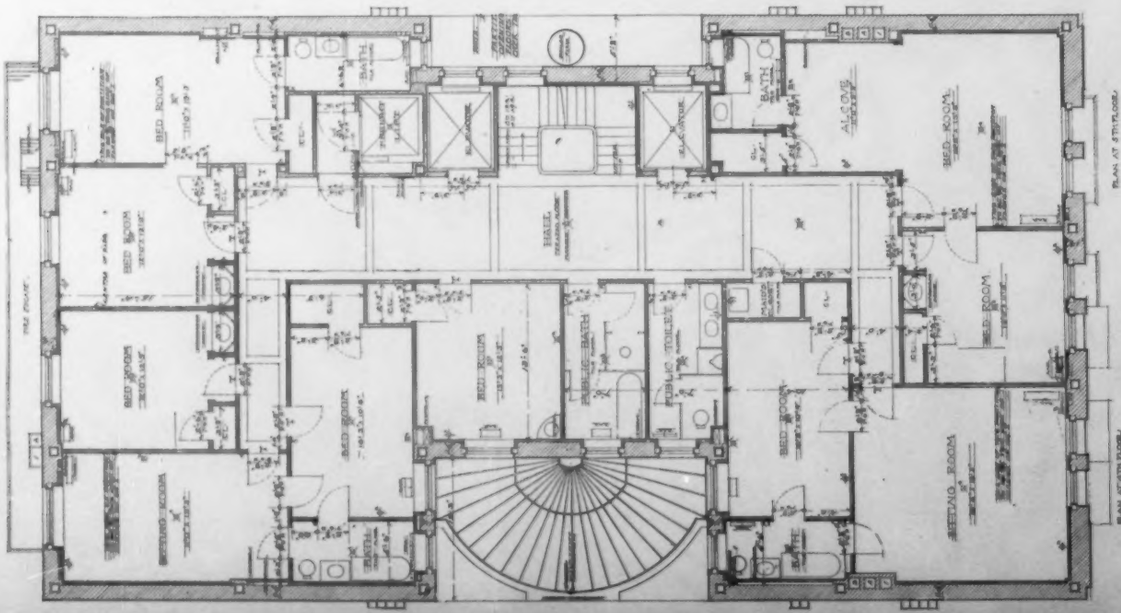
WANTED: FIRST-CLASS YOUNG DRAUGHTSMAN; GOOD IN DESIGN AND WATER COLOR; PERMANENT POSITION TO THE RIGHT MAN. W. J. KEITH, MINNEAPOLIS, MINN.



ELEVENTH FLOOR PLAN.



TENTH FLOOR PLAN.

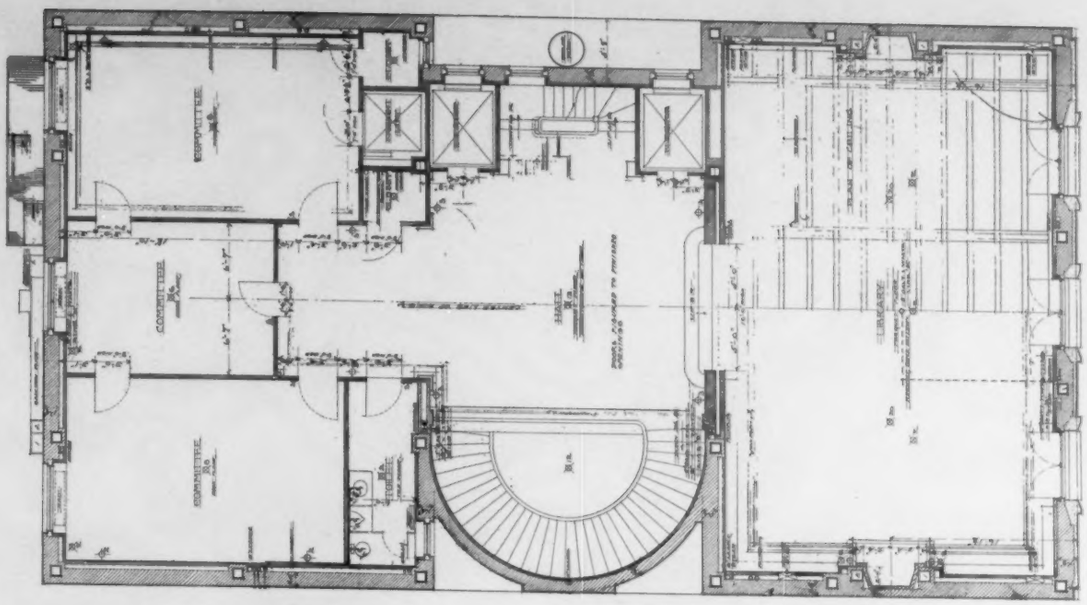


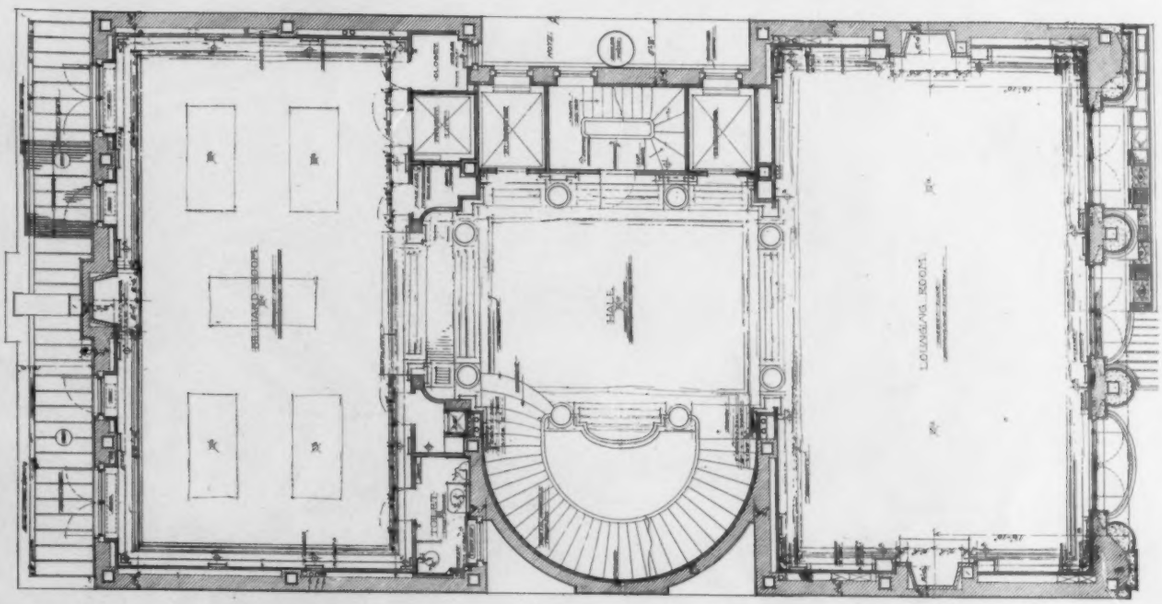
FOURTH AND FIFTH FLOOR PLANS.

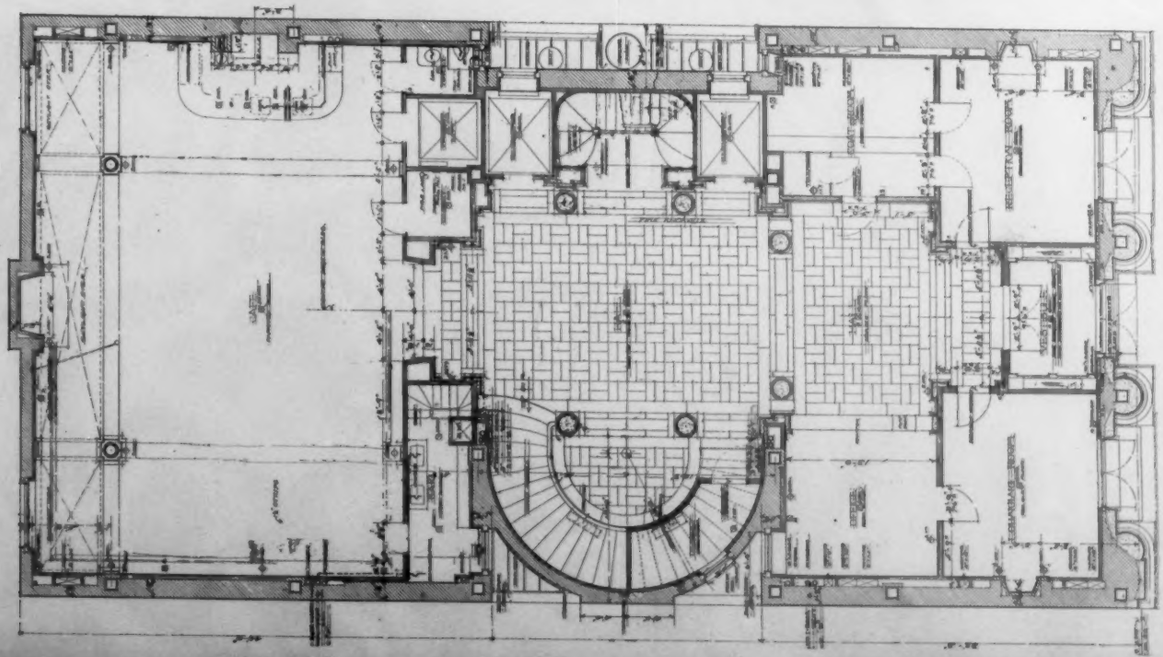
REPUBLICAN CLUB

PLATES 33 and 34.

UBLICAN CLUB BUILDING.







PLANS REPUBLICAN CLUB BUILDING, NEW YORK CITY.

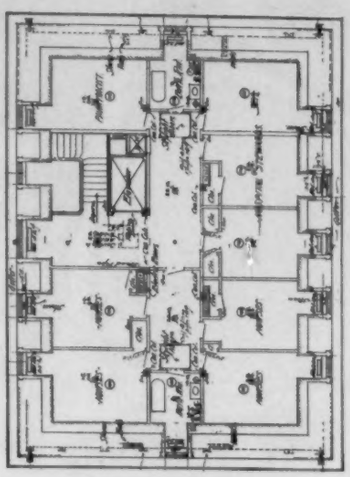
YORK & SAWYER, ARCHITECTS.

TRANSVERSE SECTION.

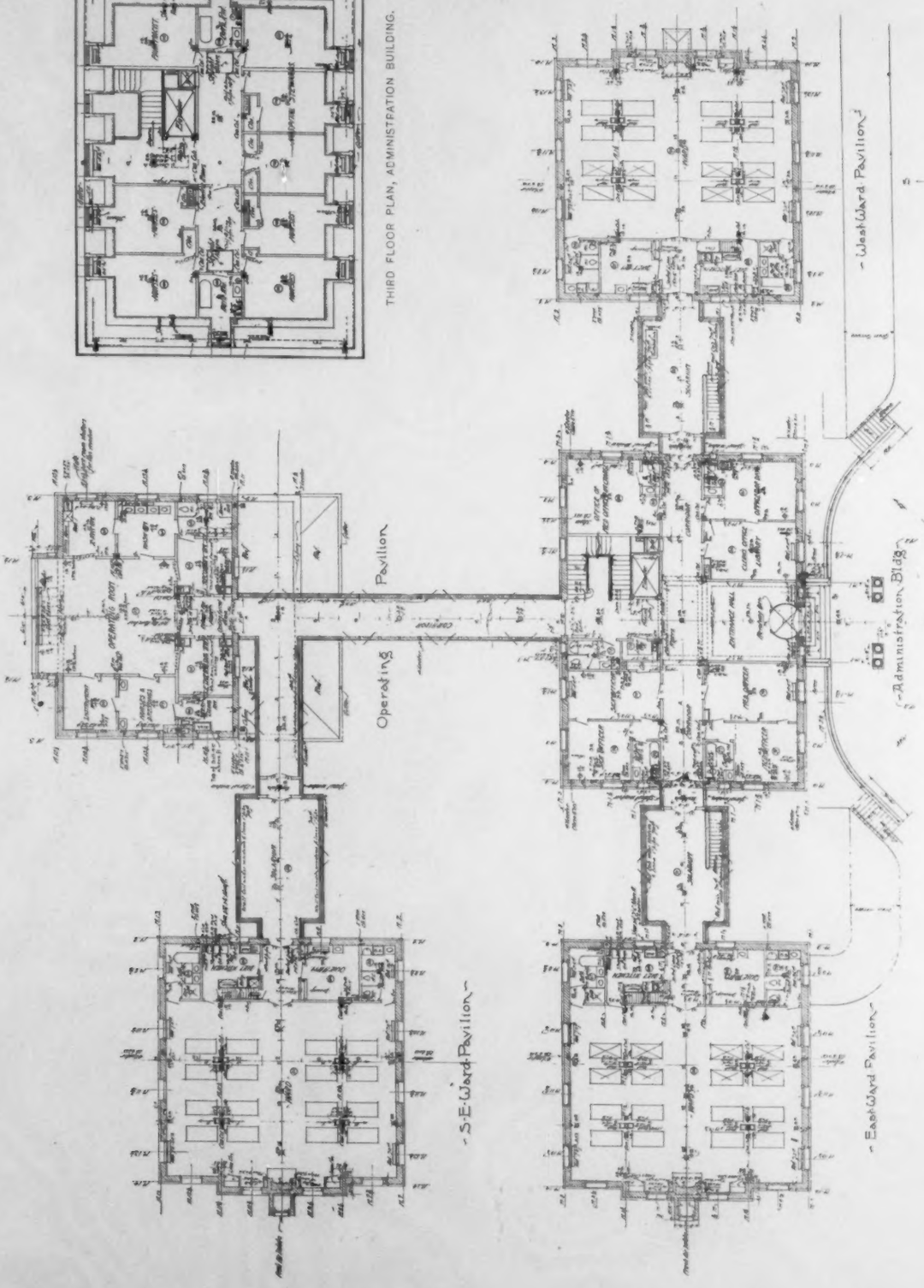
FRONT ELEVATION.

UNITED STATES NAVAL HOSPITAL, WASHINGTON, D. C.

ERNEST FLAGG, ARCHITECT.



THIRD FLOOR PLAN, ADMINISTRATION BUILDING.

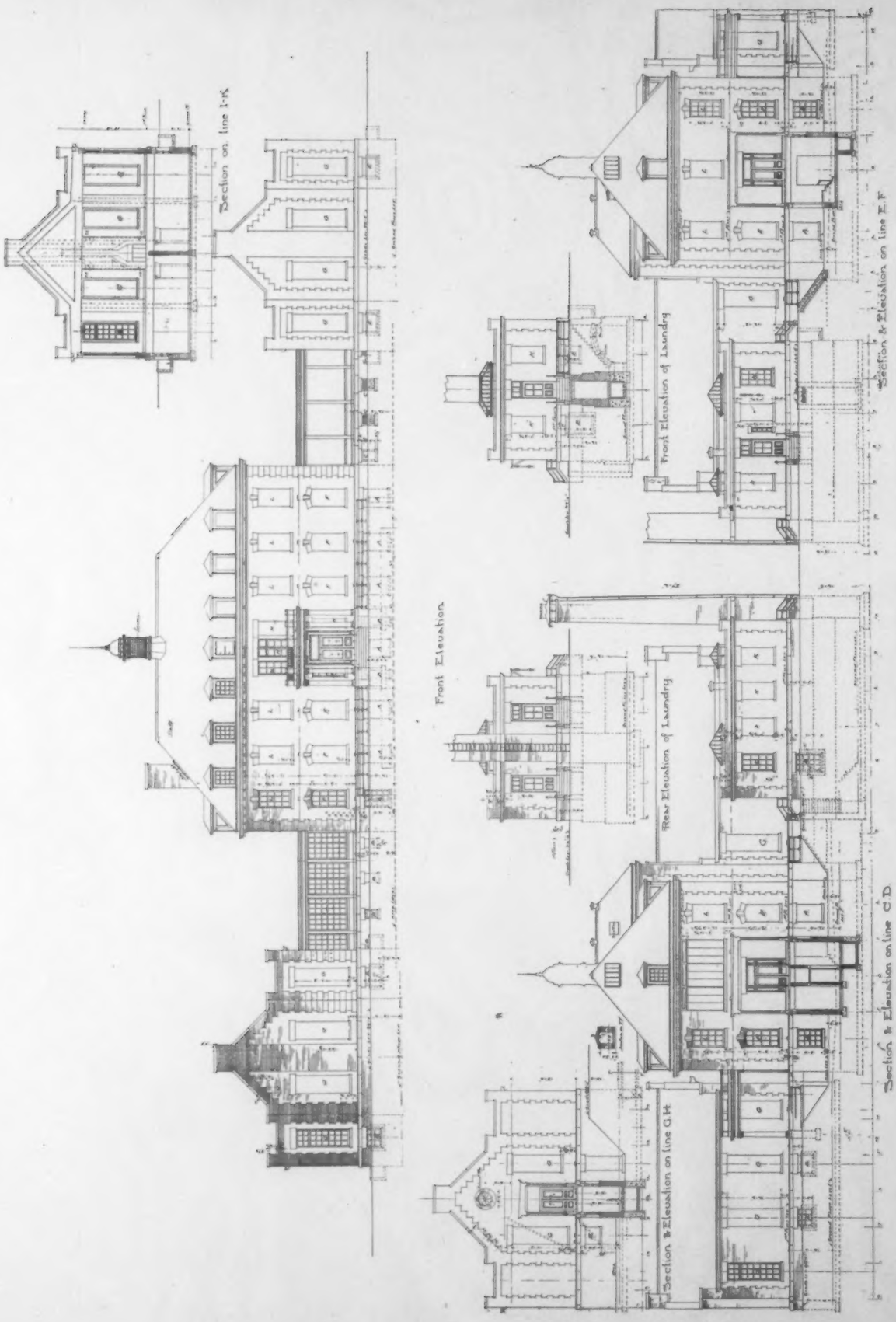


FIRST FLOOR PLAN.

PLANS, UNITED STATES NAVAL HOSPITAL, WASHINGTON, D. C.

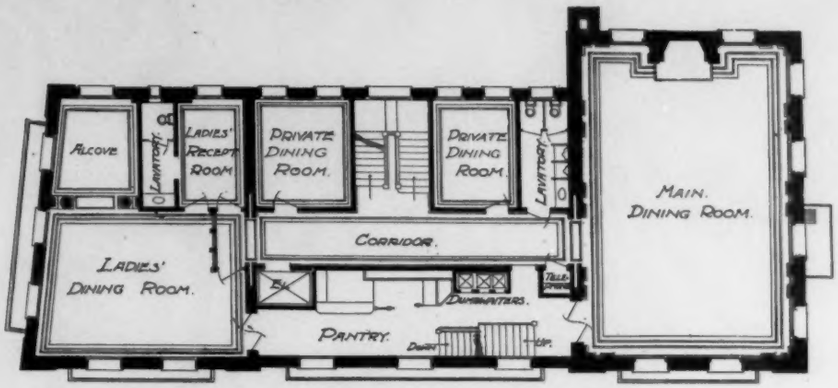
ERNEST FLAGG, ARCHITECT.

UNIV. OF

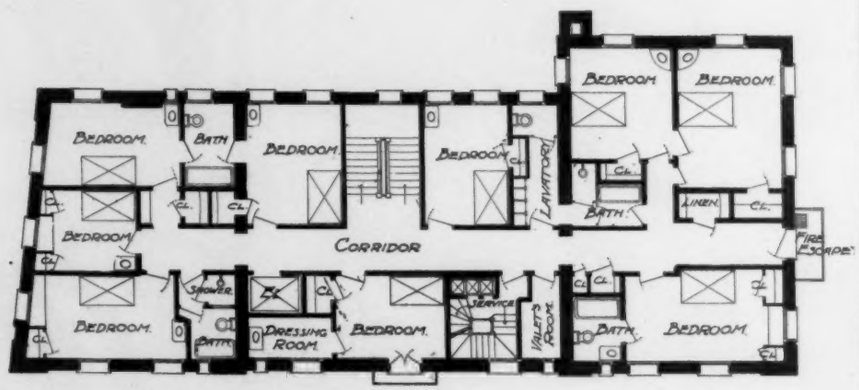

Section on line I-K
Front Elevation of Laundry
Section & Elevation on line E.F
Front Elevation
Rear Elevation of Laundry
Section & Elevation on line G.H
Section & Elevation on line C.D

UNITED STATES NAVAL HOSPITAL, ANNAPOLIS, MD.

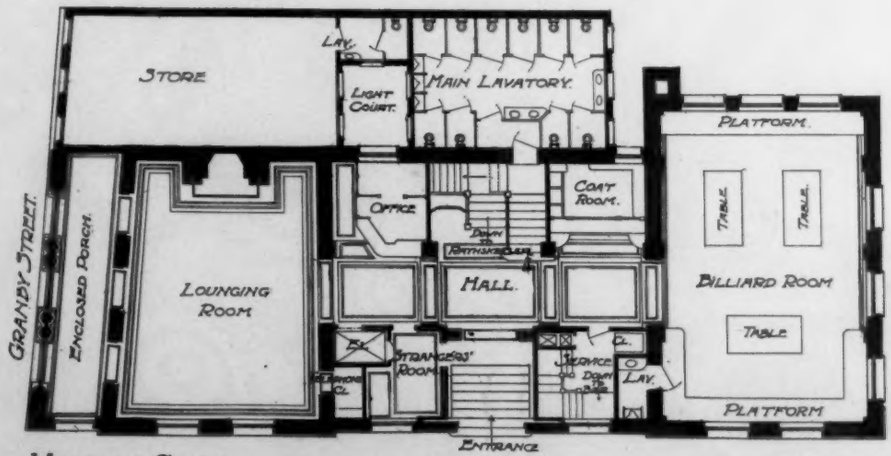
ERNEST FLAGG, ARCHITECT.



PLAN OF FIFTH FLOOR.



PLAN OF THIRD FLOOR



VIRGINIA CLUB.
NORFOLK, VA.

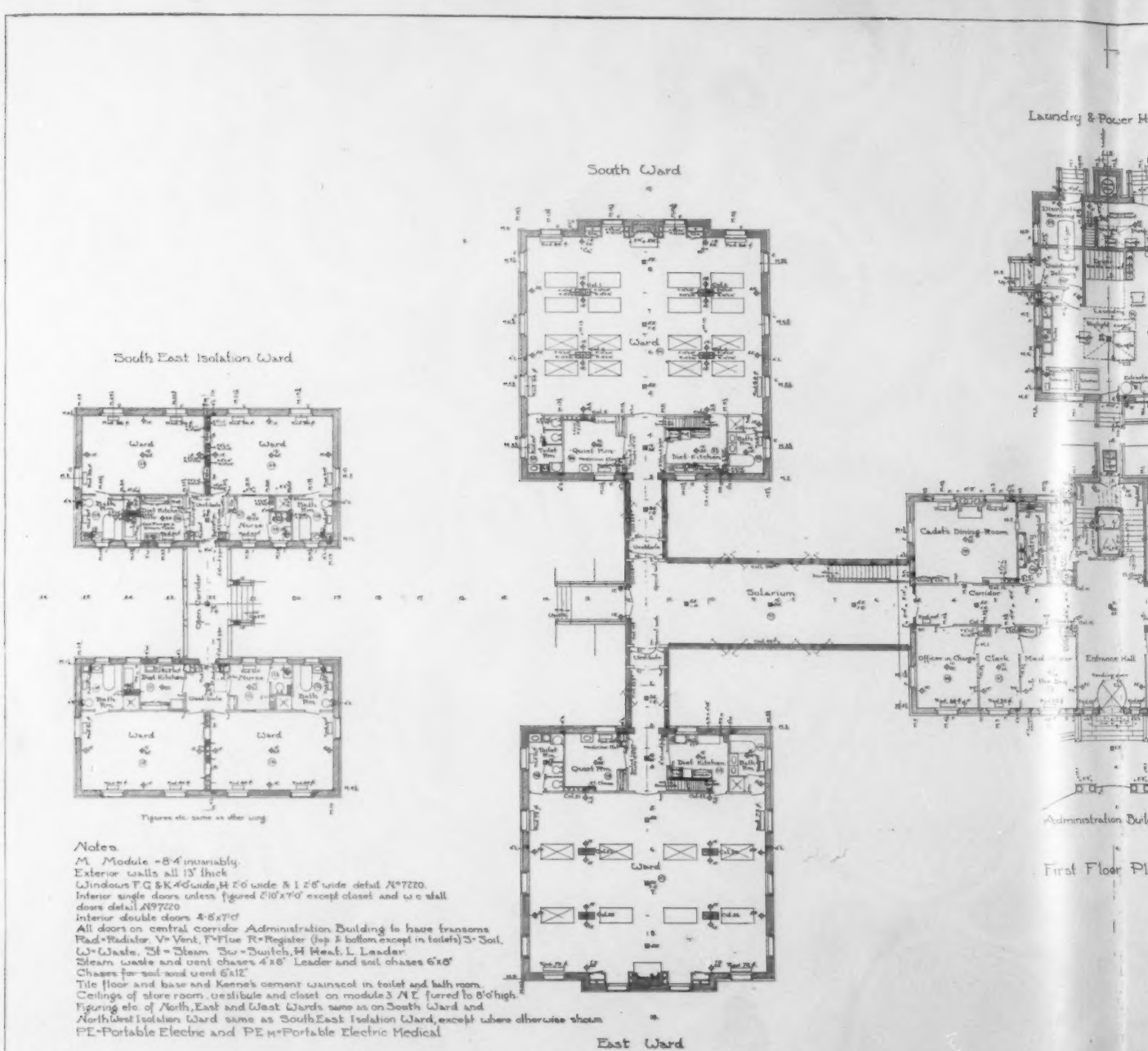
PLUME STREET

PLAN OF FIRST FLOOR

VIRGINIA CLUB, NORFOLK, VA.

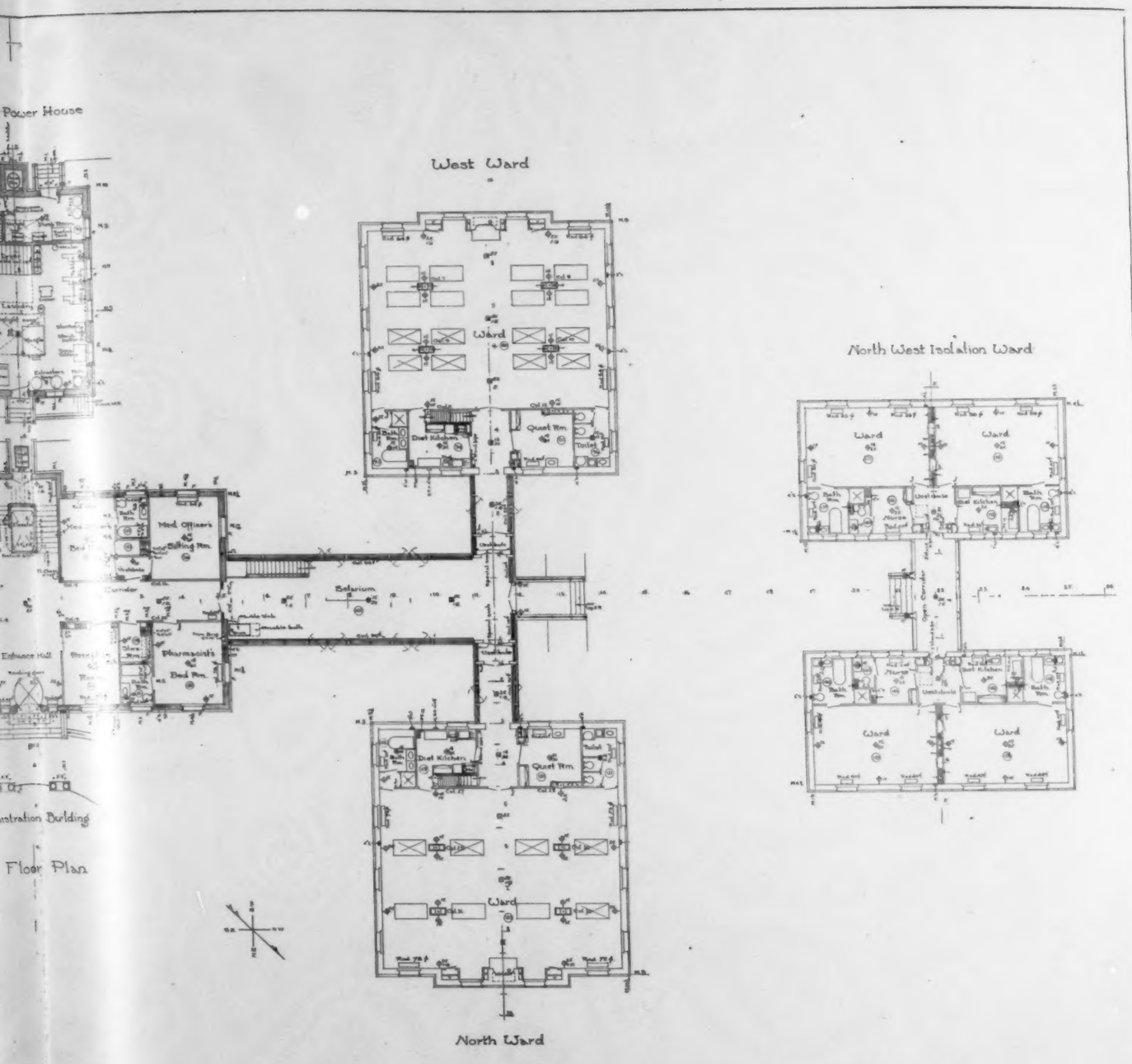
K. M. MURCHISON, JR., ARCHITECT.

UNIV. OF MICH.



Notes.
M. Module = 8'4" invariably.
Exterior walls all 13" thick
Windows F.G. & K. 4'0" wide, H 2'0" wide & 1 2'8" wide detail N°7220.
Interior single doors unless figured 2'10"x7'0" except closet and w c stall doors detail N°7220
Interior double doors 4'8"x7'0"
All doors on central corridor Administration Building to have transoms
Rad.=Radiator. V=Vent, F=Flue R=Register (top & bottom except in toilets) S=Soil.
W=Waste. St=Steam Sw=Switch, H Heat, L Leader
Steam waste and vent chases 4'x8" Leader and soil chases 6'x8"
Chases for soil and vent 6'x12"
Tile floor and base and Keene's cement wainscot in toilet and bath room.
Ceilings of store room, vestibule and closet on module 3 N.E. furred to 8'0" high.
Figuring etc. of North, East and West Wards same as on South Ward and
North West Isolation Ward same as South East Isolation Ward, except where otherwise shown
PE=Portable Electric and PEM=Portable Electric Medical

PLANS, UNITED STATES NAVAL H
ERNEST FLAGG, ARC



NAVAL HOSPITAL, ANNAPOLIS, MD.
T FLAGG, ARCHITECT.

J

UNIV OF MICH

VIRGINIA CLUB, NORFOLK, VA.
K. M. MURCHISON JR., ARCHITECT.

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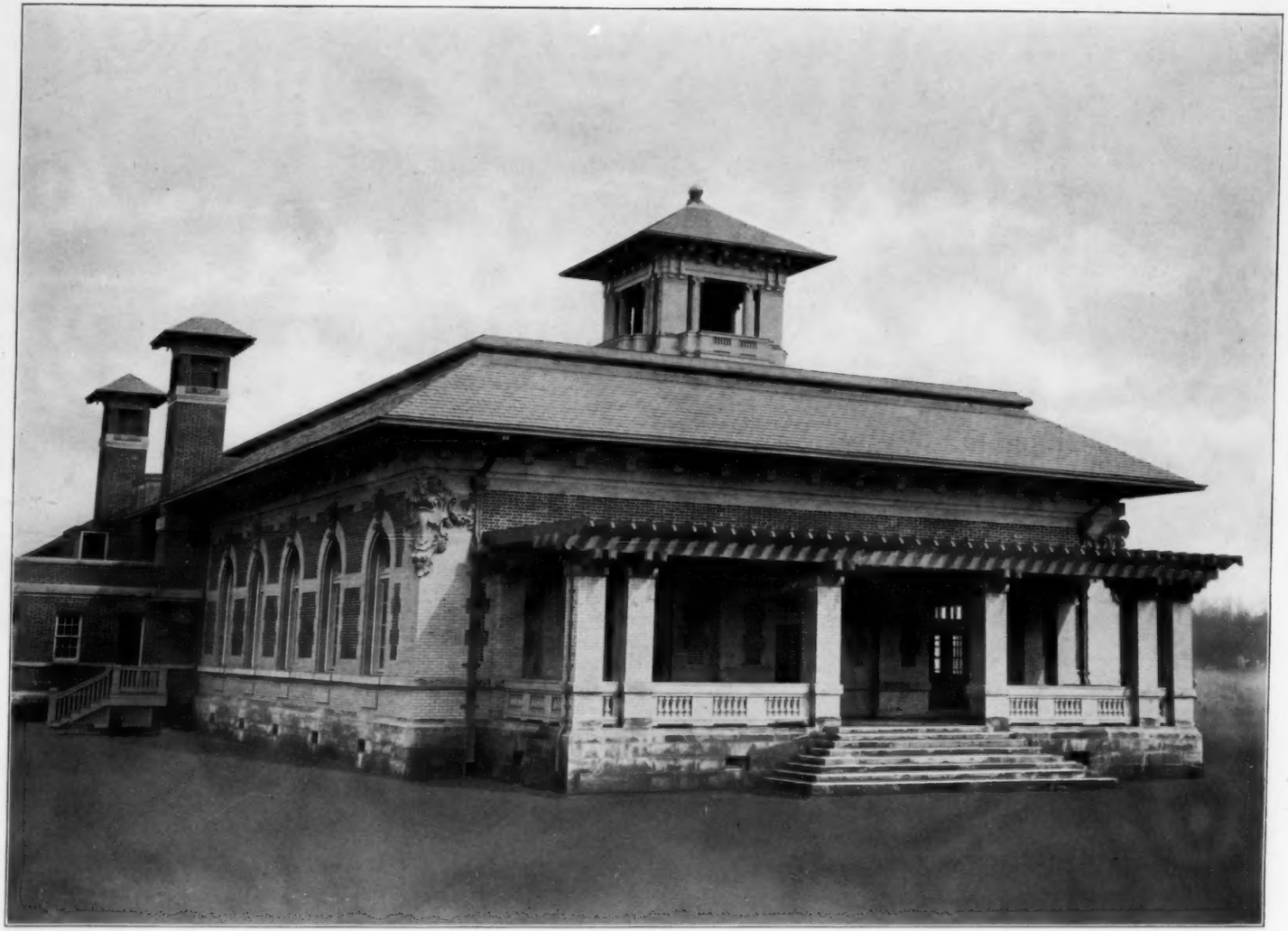


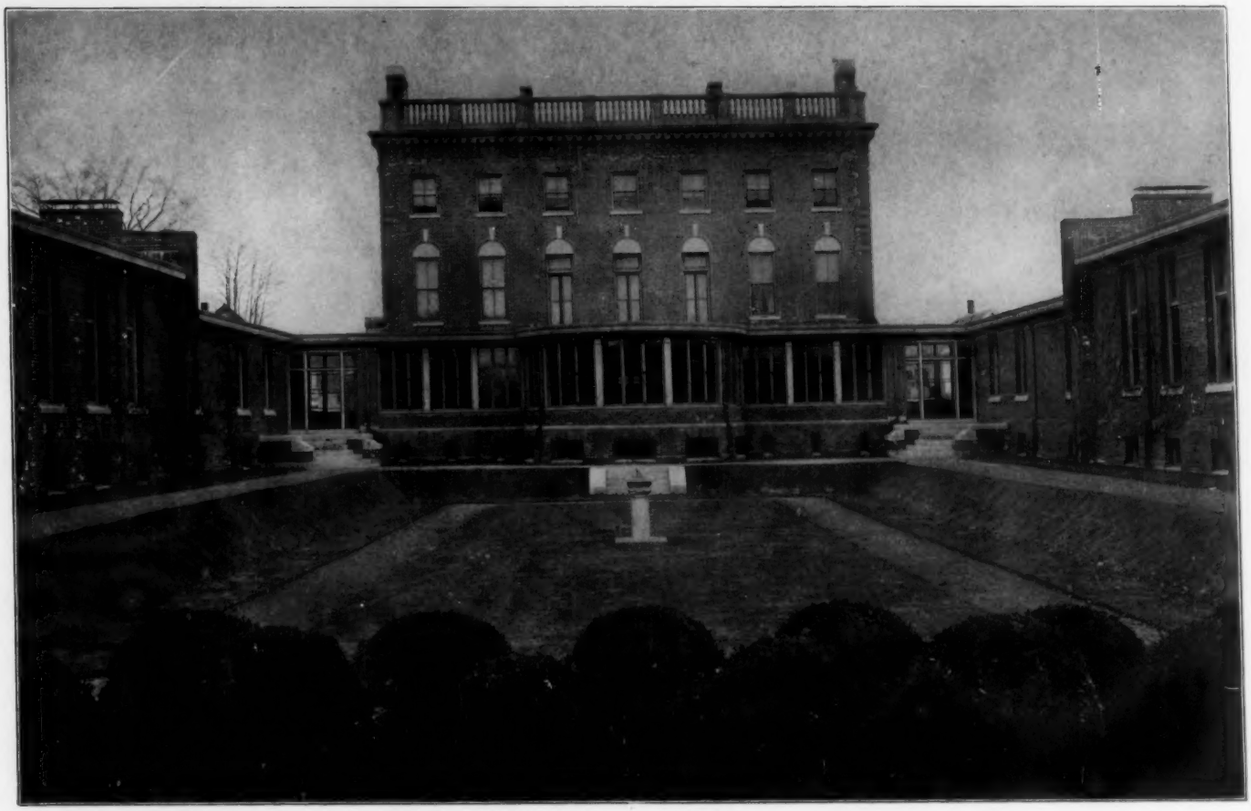
THE MESS HALL, VIEW OF EAST PORCH.

NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS, JOHNSON CITY, TENN.

(ELEVATION AND PLANS ILLUSTRATED IN THE BRICKBUILDER FOR APRIL, 1903.)

J. H. FREEDLANDER, ARCHITECT.

UNIV. OF MICH.



THE OPEN COURT.

HOSPITAL AT NEWPORT, R. I.

WILLIAM ATKINSON, ARCHITECT.

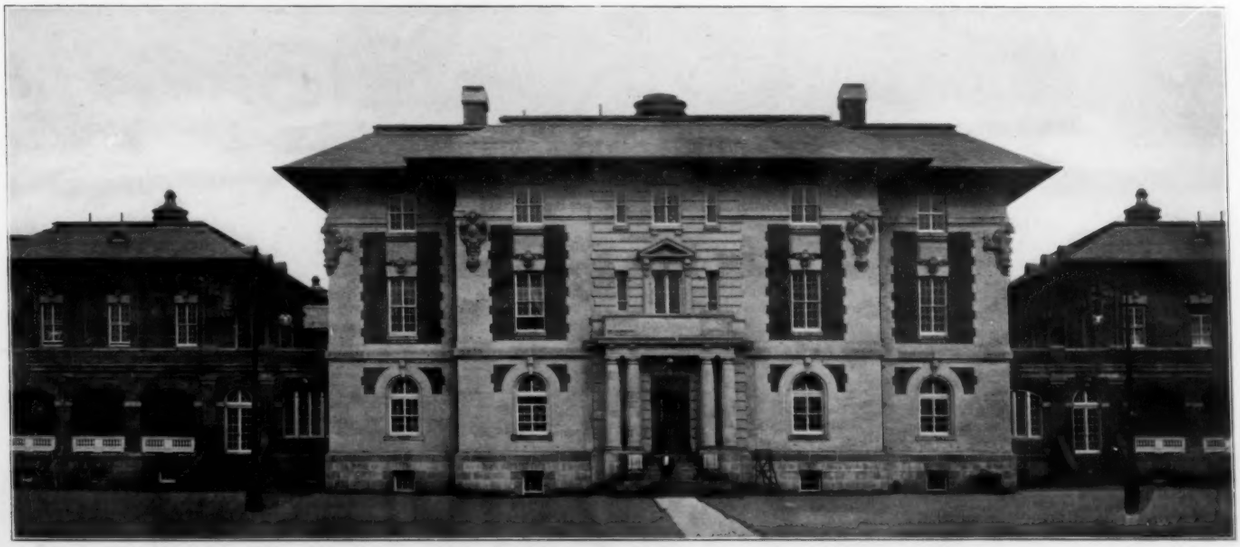
UNIV. OF MICH.

DETAIL OF LOWER PORTION OF REPUBLICAN CLUB NEW YORK CITY.
YORK & SAWYER, ARCHITECTS.

UNIV. OF MICH.

OPEN COURT, HOSPITAL GROUP.

THE HOSPITAL GROUP.



ADMINISTRATION BUILDING, HOSPITAL GROUP.

NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS, JOHNSON CITY, TENN.

(ELEVATION AND PLANS ILLUSTRATED IN THE BRICKBUILDER FOR APRIL, 1903.)

J. H. FREEDLANDER, ARCHITECT.

UNIV. OF MICH.

TOWER OF MESS HALL.

NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS, JOHNSON CITY, TENN.

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J. H. FREEDLANDER, ARCHITECT.

UNIV. OF MICH.